NASA TechTracS

Database Administrator Manual

NASA TechTracS DBA Manual

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Foreword

NASA TechTracS was initially written as a business tool to aid in NASA's processing of its intellectual property. Over the last 3 years it has evolved into a managment tool which supports all facets of NASA's technology transfer and commercialization mission. This manual provides valuable and essential information to each centers' TechTracS DBA.

The NASA TechTracS DBA Manual is divided into 4 major sections:

Section 1: Database Administrator (DBA) Operational Functions

DBA operational functions are areas of NASA TechTracS which should only be performed by the field center disignated DBA. The functions are reserved for the only the DBA because unusual behavior might result from misuse. DBA operational functions discussed include: **1**) Adding, Deleting 4D Licenses, **3**) User ID, **4**) Constants Table, and **5**) List Management.

Section 2: Searching Techniques

When searching for data within NASA TechTracS, a powerful built-in Query Editor is available to assist in locating data. The Query Editor is usually the first step involved in a series of user actions whose goal is to locate a set of records and then perform an operation (ie. Quick Report) on the query result.

Section 3: Output Techniques

Several output techniques which are typically directed to a printer are available to NASA TechTracS users. Output techniques discussed include: **1**) Quick Report Editor, **2**) 4D Write, **3**) Letters, and **4**) Label Editor.

Section 4: Special NASA TechTracS Functions

Several special functions are available to assist the DBA or user in manipulating or providing information from NASA TechTracS. Special functions include: **1**) NASA TechTracS Expressions, **2**) QRList, **3**) Exports of Data, and **4**) Apply Formula.

Updating Licenses

Getting Started
Adding Licenses
Removing Licenses
Important Security Notes

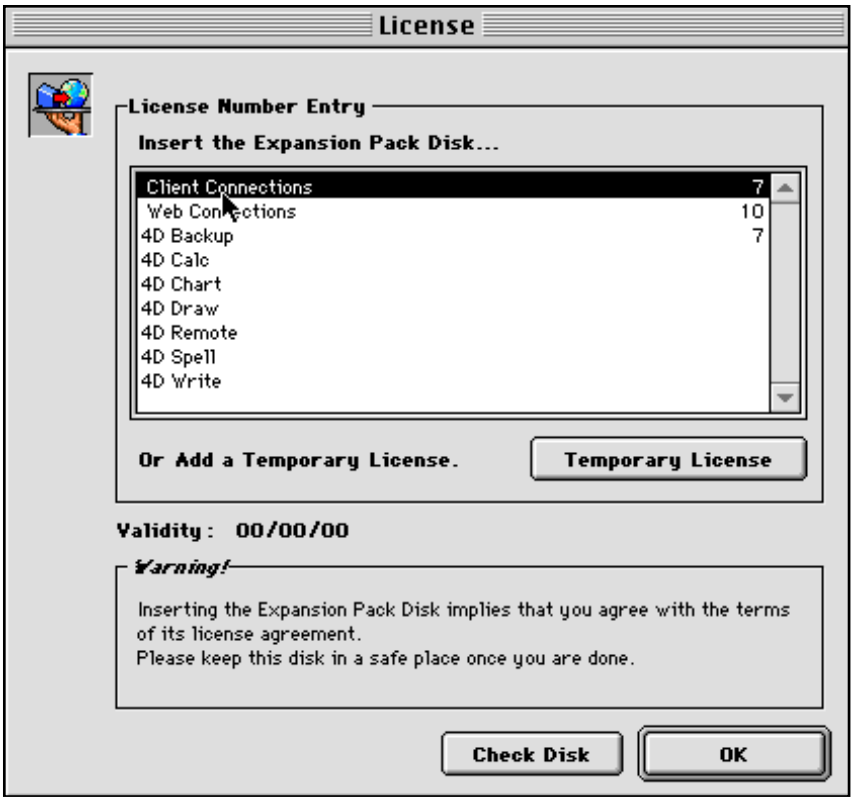
Overview

4D License update is a procedure that only takes place on the 4D Server. It is the means by which the DBA can increase or decrease 4D Server's capacity to receive different types of connections. These include 4D Client access, Web connections, 4D Write connections, etc. A server without 4D Client connections will not allow any users into the database. Similarly, a server without 4D Write license will keep the users from using the 4D Write capabilities embedded into NASA TechTracS even though they could connect and use any other features.

Getting Started

1. Select the "*Update License*" item from the "***File***" menu.

2. The License window appears as shown below.

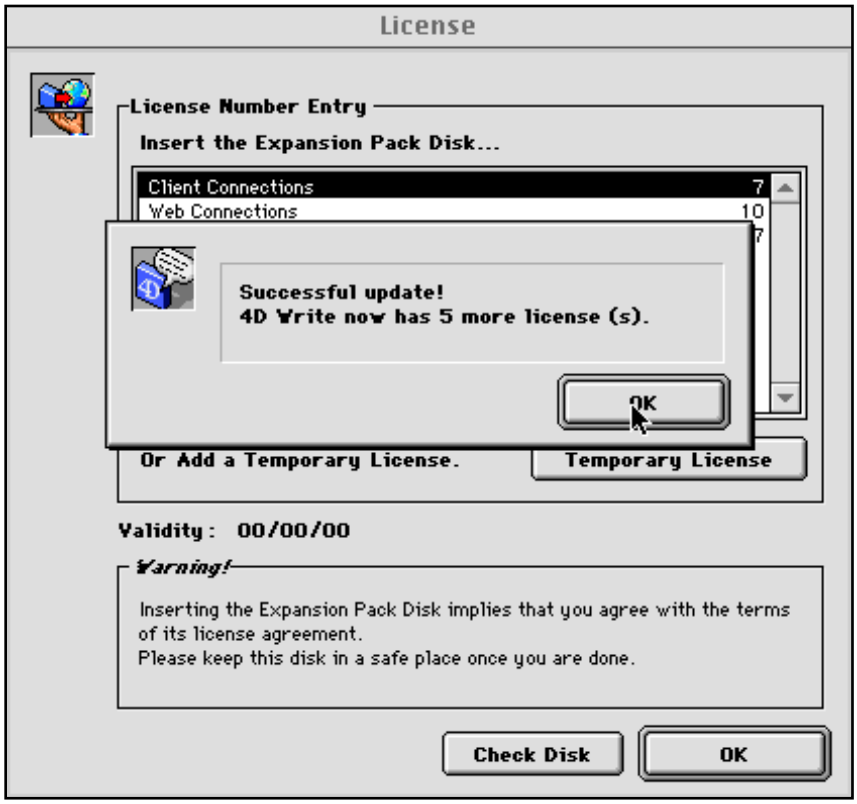


The license window displays what kind of licenses can be updated on the 4D Server. It indicates the current number of licenses installed for each component. In the example above, seven 4D Client connections, ten Web connections, and seven 4D Backup licenses are installed.

Adding Licenses

1. Insert the license disk with the components you wish to update. For example, to update the 4D Write licenses, insert the 4D Write license disk. After the disk has been inserted, a dialog window is displayed confirming the update. The **Check Disk** button located in the lower right corner of the license window must be clicked to update disks based on Windows 95 or Windows NT.

2. A dialog will display notifying of a successful update and indicates how many licenses have been added.



3. Click the **OK** button. The license window will display licenses.

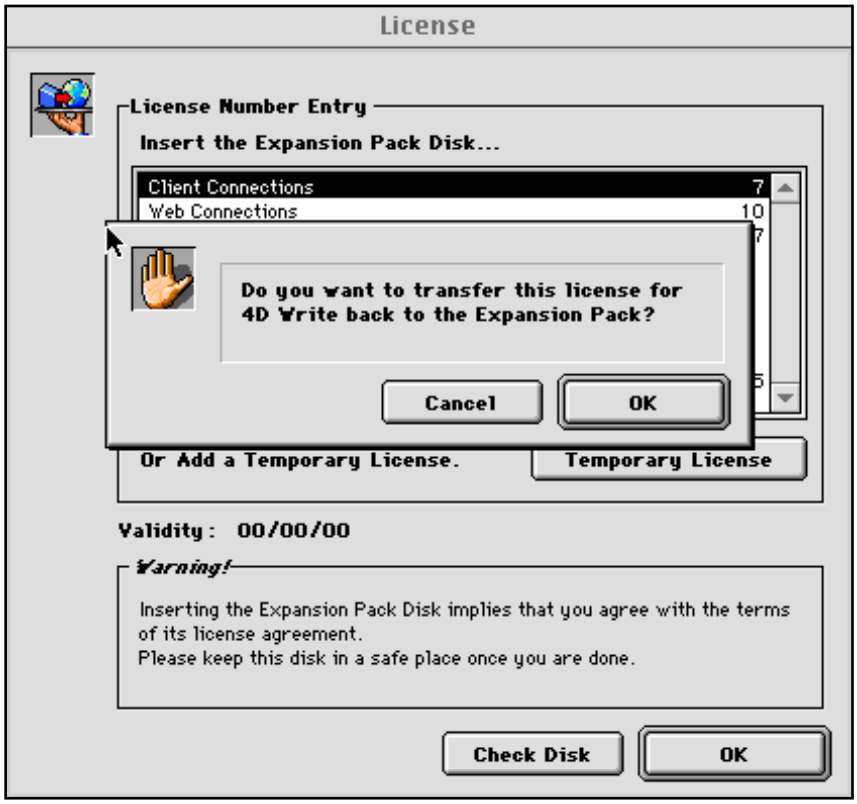
Removing Licenses

In this case, you want to remove licenses from the 4D Server. Considering that we have added 4D Write licenses, we are going to remove them. We currently have five 4D Write licenses loaded on the server.

To remove them:

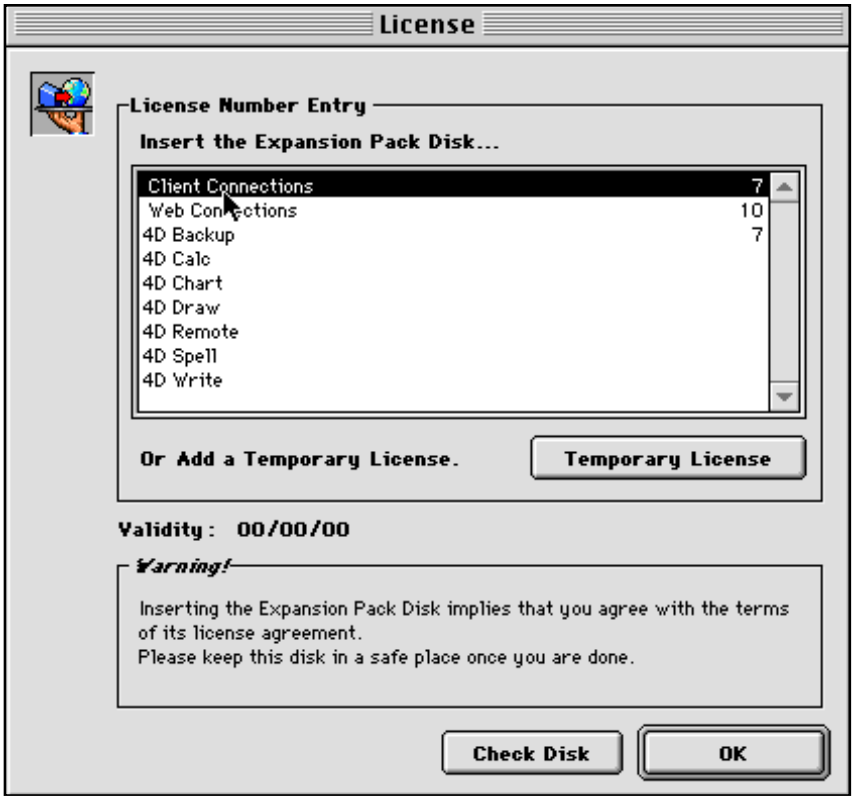
1. Insert your 4D Write license disk (and click the Check Disk button on Windows).

2. A dialog window is displayed prompting you for the license update.



3. By clicking the **OK** button, the licenses are removed from the server and transfered back to the disk. To cancel this operation click the **Cancel** button.

4. Click the **OK** button. The license window will display the revised number of 4D Write licenses.



In either case, adding or removing licenses, click the **OK** button to finalize the license update.

Important Security Notes

It is extremely important for the database administrator to secure the license disks. The disk cannot be copied. If any license disks are lost, the licenses can not be removed from the server.

Password Guide

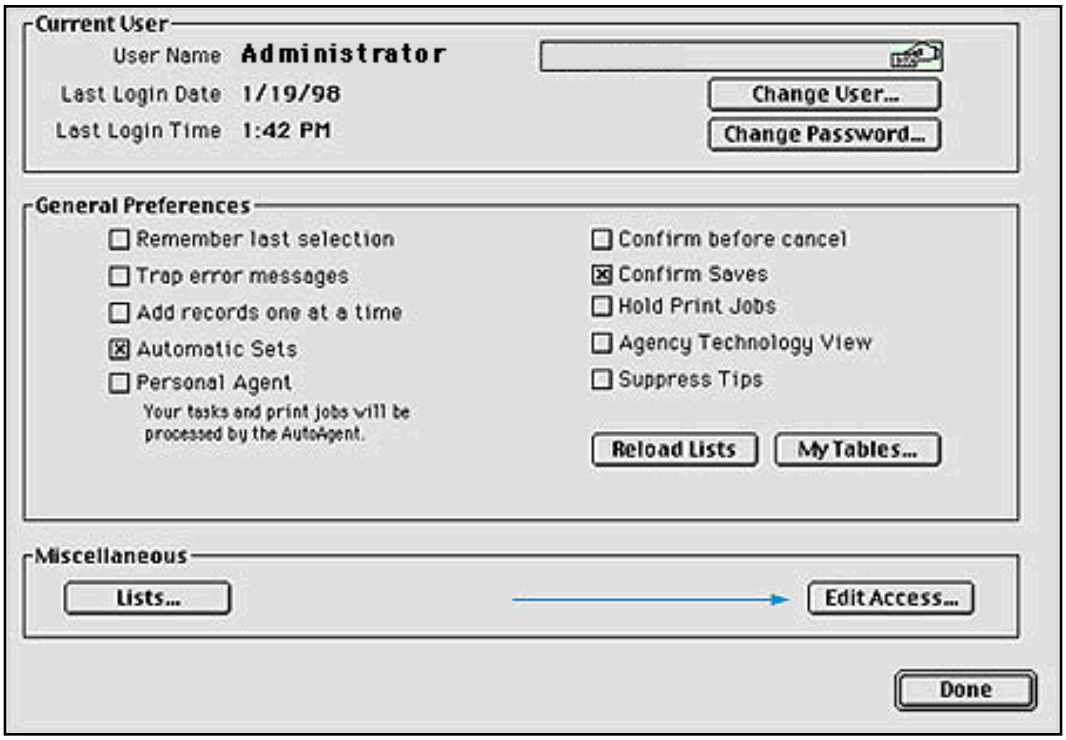
Getting Started
Add Users
Modifying Users
Group Management
4D Write License Limitations

Overview

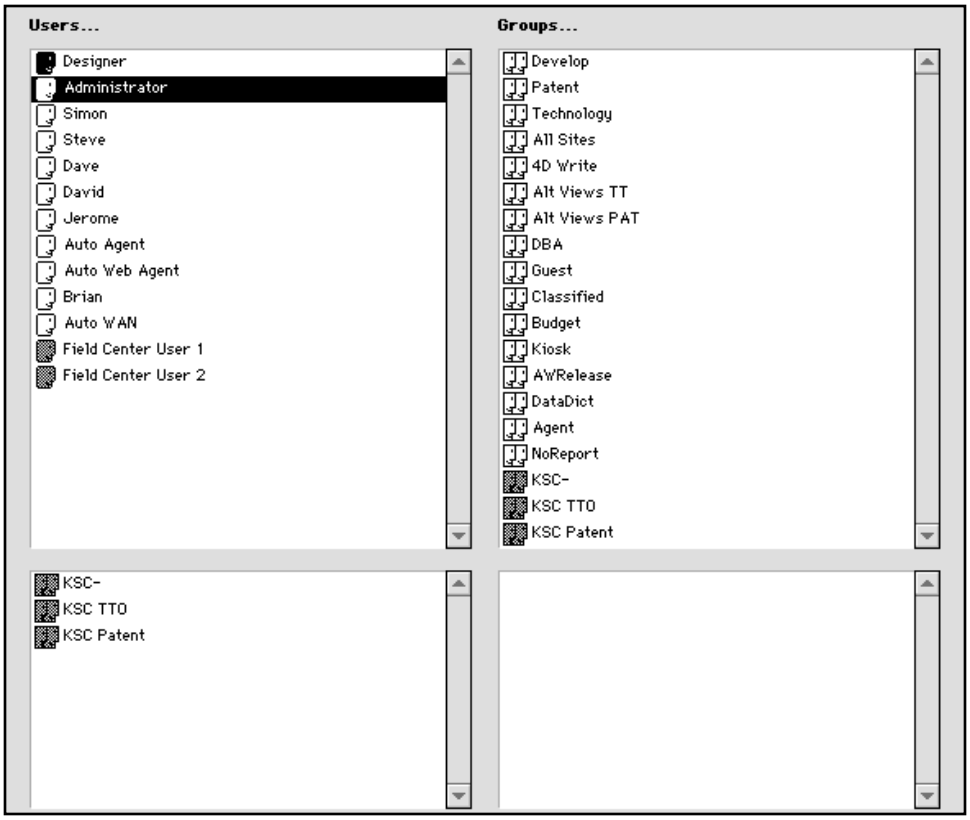
NASA TechTracS utilizes a comprehensive user and group password system. Users are assigned access privileges via groups. Group privileges range from database administrator access to read only access. Several groups with predefined privileges are provided.

Getting Started

On the first sign in to NASA TechTracS, log in with the user name “Administrator” and a password that will be provided. From the Data Control Panel, click on the **Prefs** icon. Then click on the **Edit Access** button located on the lower right of the following dialog box.

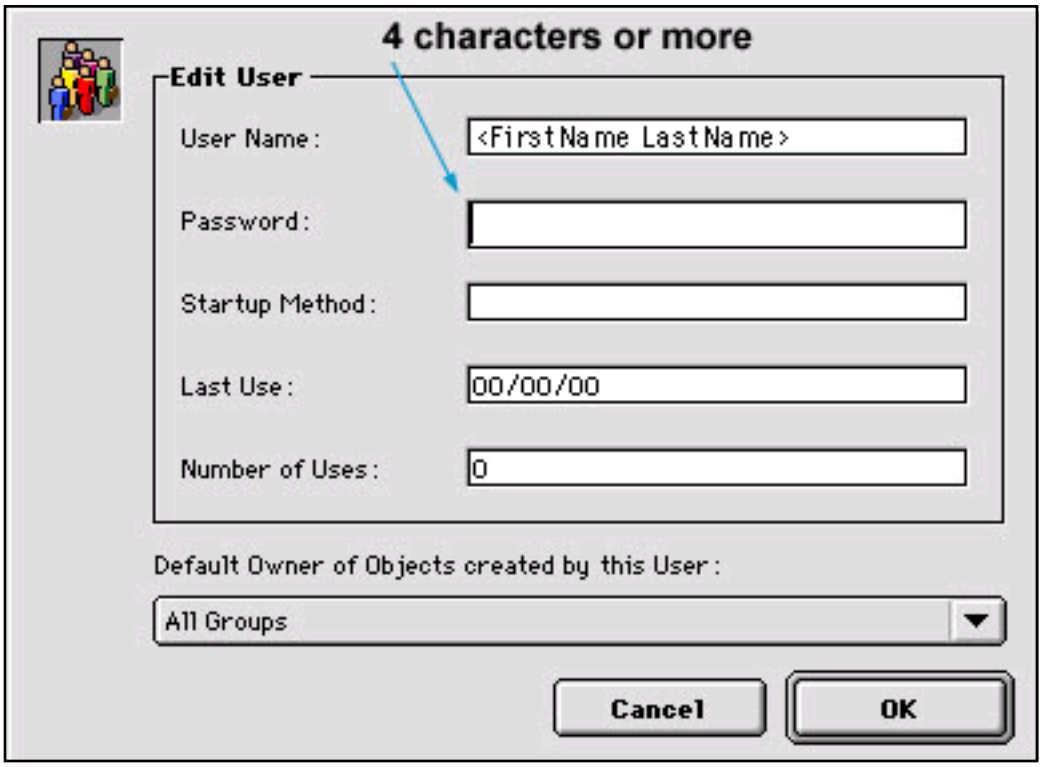


The users and groups management window is displayed. In the default state only technical support users are available. Field center users who need access to NASA TechTracS must be entered.


Users...
Designer
Administrator
Simon
Steve
Dave
David
Jerome
Auto Agent
Auto Web Agent
Brian
Auto WAN
Field Center User 1
Field Center User 2
Groups...
Develop
Patent
Technology
All Sites
4D Write
Alt Views TT
Alt Views PAT
DBA
Guest
Classified
Budget
Kiosk
AWRelease
DataDict
Agent
NoReport
KSC-
KSC TTO
KSC Patent
KSC-
KSC TTO
KSC Patent

Add Users

To create a new user, select the "*New User*" item from the "***Passwords***" menu.



User Names are normally entered in the form: "Firstname Lastname". Passwords should be 4 characters or more and contain a mix of letters and numbers. Do not create an account without a password. For instance, "**A1BCD4**" is a correct password. Do not use first names or any word that can be guessed for a password and do not create an account without a password.

The Startup Method field must be left blank and the other fields should not be modified.

Deleting Users

There is no specific way to delete a user. If a user needs to be removed, the best solution is to change the user name. To do this:

1. Highlight the user name to be removed.

2. Select the "***Edit User***" item from the "***Password***" menu or double-click the user name.
3. Rename "User Name" to `Available Slot #`.

4. Type garbage into the password field.

Use a number, 1 through ..., at the end of *Available Slot*. Duplicate names should not be entered in the Users list.

Modifying Users

To modify users double click on the user name. A dialog is displayed where the user name and password can be changed.

NOTE: Passwords cannot be seen by anyone including the Administrator. Therefore, if a password is forgotten you must assign a new one. To modify a user simply double-click on the users name and modify the settings.

Group Management

It is not necessary to create any new groups other than the ones available in the template provided at the first login. NASA TechTracS does not support privileges for any additional groups.

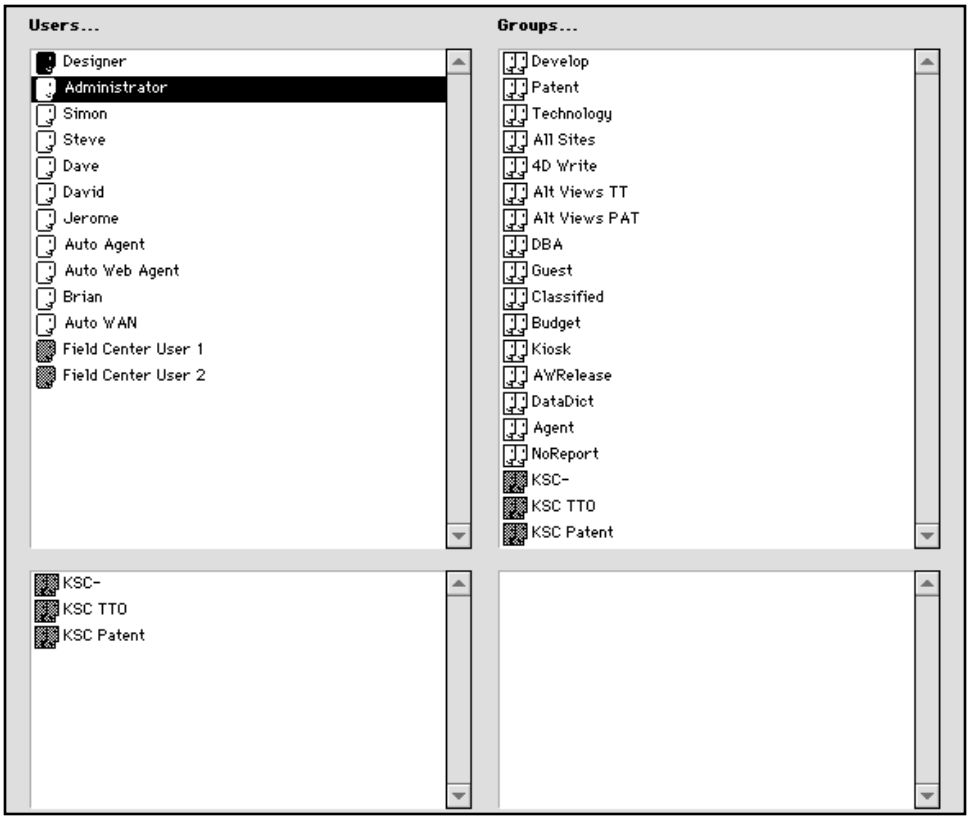
Modification of the Default Center Specific Group

Each Administrator is required to modify the Group Name of the "XYZ-", "XYZ TTO", and "XYZ Patent" group. Double-click on the group in the upper right window to access its properties. The XYZ portion must be replaced by the field center code. The list provided below will help to identify the field center code.

Kennedy Space Center ---------- KSC
Marshall Space Flight Center --- MFS
Langley Research Center -------- LAR
Goddard Space Flight Center --- GSC
Agency Wide ---------- HQ
Lewis Research Center ---------- LEW
Stennis Space Center ---------- SSC
Johnson Space Center ---------- MSC
Dryden Flight Research Center - DRC
Jet Propulsion Laboratory ------- NPO
Ames Research Center ---------- ARC
Headquarters Unique ---------- HQN

Adding Users to a Group

Once all the users have been created, the Administrator can start adding the created users into the appropriate groups. To add a user to a group, select the user name by clicking once. Hold the mouse button down and drag the user name over the top of the group and drop the user name into the group by releasing the mouse button.



The upper left pane is a list of all the users and the upper right pane is a list of the groups. In the lower left pane, the Administrator can see which groups the selected user is in. In the lower right pane, the Administrator can see which users are in the selected group.

The Administrator must be aware of the importance of assigning a user to the appropriate group. The first task of the Administrator at this point is to set the users in either the XYZ TTO group or the XYZ Patent group depending on their function.

Removing Users From a Group

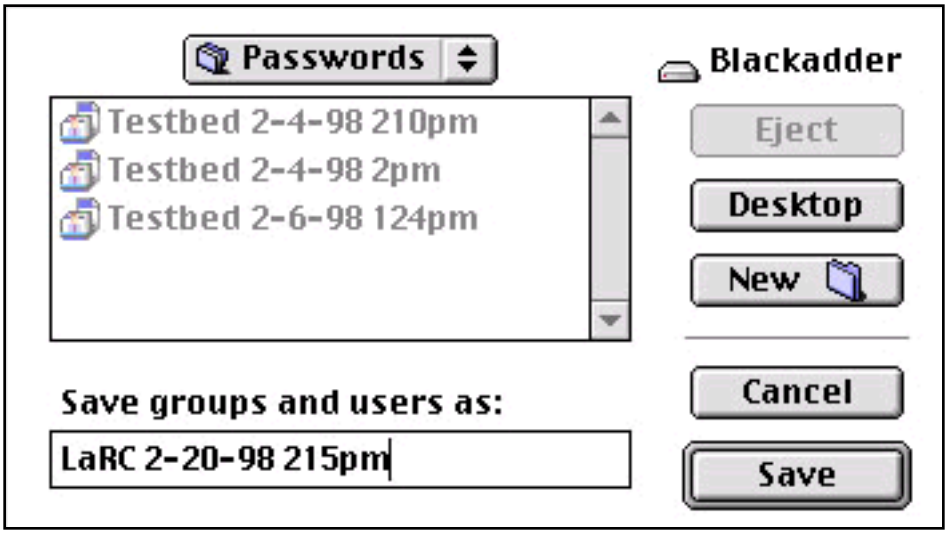
To remove a user from a group, click the group name from which the user is to be removed. In the lower right window click and drag the user name outside the window and release the mouse button.

Saving Users and Groups

When all of the users and groups have been configured they can be saved to a file. Saving this information to a file allows for easy retrieval in the event corruption occurs or when a new version of NASA TechTracS is released.

1. Select the "*Save Groups*" item from the "***Passwords***" menu.

2. A dialog will appear allowing you to enter a name for the saved groups file. Please follow the file naming convention as depicted below. This naming convention is appropriate because it identifies the file in three ways:
   A: Field Center site code.
   B: Date the users and groups file was saved.
   C: Time the users and groups file was saved.



Loading Groups

In the event users and groups require loading, perform the following steps:

1. Select the "*Load Groups*" item from the "***Passwords***" menu.

2. Select the file you want to restore and click the **Open** button.

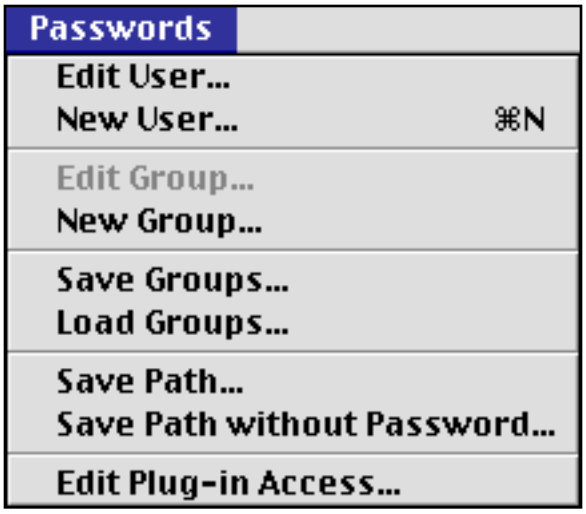
Creating Startup Keys For Users

Startup Keys provide a simplified method for users to access NASA TechTracS. 4D allows the users to automatically startup NASA TechTracS by simply double-clicking on their Startup Key.

Startup Keys can be created in two ways:

1. Opening NASA TechTracS without a password prompt.
2. Opening NASA TechTracS with a password prompt.

For security purposes, it is recommended to set up user keys without the automatic password. To create a Startup Key, select the "*Save Path Without Passwords*" item from the "***Passwords***" menu. "Save Path" creates a key that will open NASA TechTracS without a password prompt. "Save Path without Password" creates a key that will open NASA TechTracS and asks the user to enter their password.



For complete descriptions of the NASA TechTracS groups see **Appendix B**.

4D Write License Limitations

The Auto Agent must be put in the 4D Write group in order for Auto Agent print jobs to process. Therefore, if there are no 4D Write licenses on the server and the Auto Agent tries to print something in it's queue, an error will appear.

The Auto Agent will consume 1 4D Write license, however, if there are users that need 4D Write to create documents, more licenses will be required. If there are two 4D Write user licenses then only two users at a time are allowed to use 4D Write.

Constants Table

Site Constants
Contract/Grant Site Document Policies I
Contract/Grant Site Document Policies II
Auto Printer Settings
Site Document header
E-mail Settings
Auto Agent Control
Wide Area Network Control
Automatic Scans
Process Stack Settings

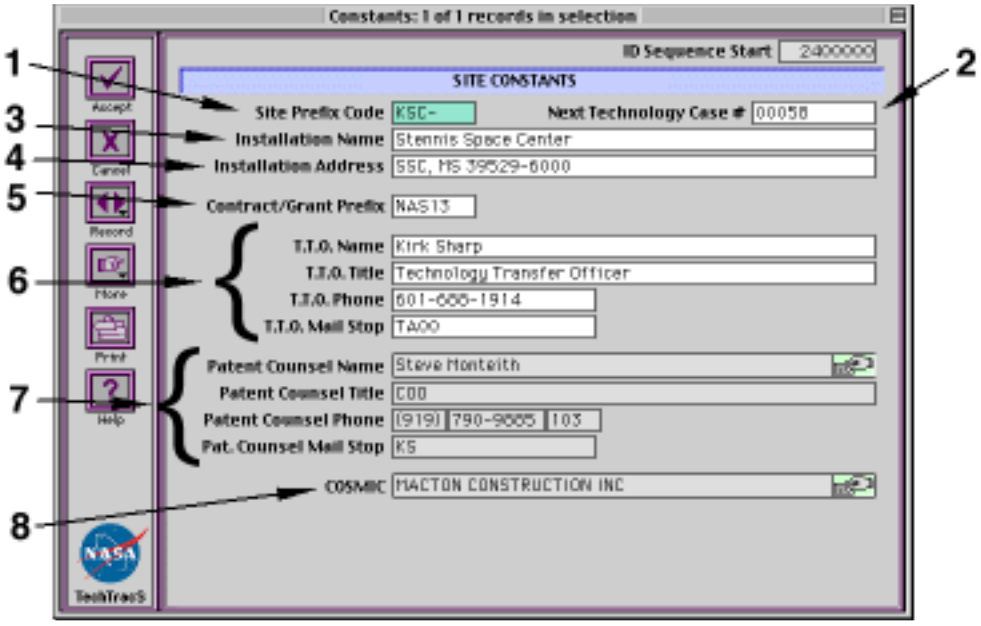
Overview

The Constants Table contains items of information for NASA TechTracS about settings and values for each Field Center and their methods of operation. There is only one record in the Constants Table which is unique to each Field Center. This record will load automatically when Constants is selected from the Data Control screen.

From the Constants Table, the DBA can control everything from automatic form generation of reports to the advanced WAN capabilities of the AutoAgent machine. Exercise caution when editing the Constants record. Some of the settings can have dramatic effects on NASA TechTracS users and the way NASA TechTracS operates.

This chapter provides a guide of the features of the Constants record and explains the function of each item. There are 10 screens of information and settings that can be accessed from the **More** button.

Site Constants



The **Site Constants** page contains information NASA TechTracS uses to differentiate and customize the field centers.

1) Site Prefix Code

A three character code followed by a hyphen (e.g.: KSC-) that is used as a default prefix to all new Technology records.†

2) Next Technology Case

NASA TechTracS automatically assigns a case number to new technologies. This field sets the case number starting point. Each subsequent new technology is incremented by one. The user may override the calculated case number, if desired.†

3) Installation Name

The official name of the Installation (e.g.: John F. Kennedy Space Center) which is used in various reports.†

4) Installation Address

The official address of the Installation (e.g.: Kennedy Space Center, Florida 32899) which is used in various reports.†

---

†. Pre-established fields for each field center that do not need to be changed.

5) Contract/Grant Prefix

Normally, a five character code followed by a hyphen (e.g.: NAS10-) that is used as a default prefix for all new Contract/Grant records.†

6) T.T.O. Name/Title/Phone/Mail Stop

Four fields of information identifying the Technology Transfer Officer at the Field Center. This information appears in various reports and on some correspondence.

7) Patent Counsel Name/Title/Phone/Mail Stop

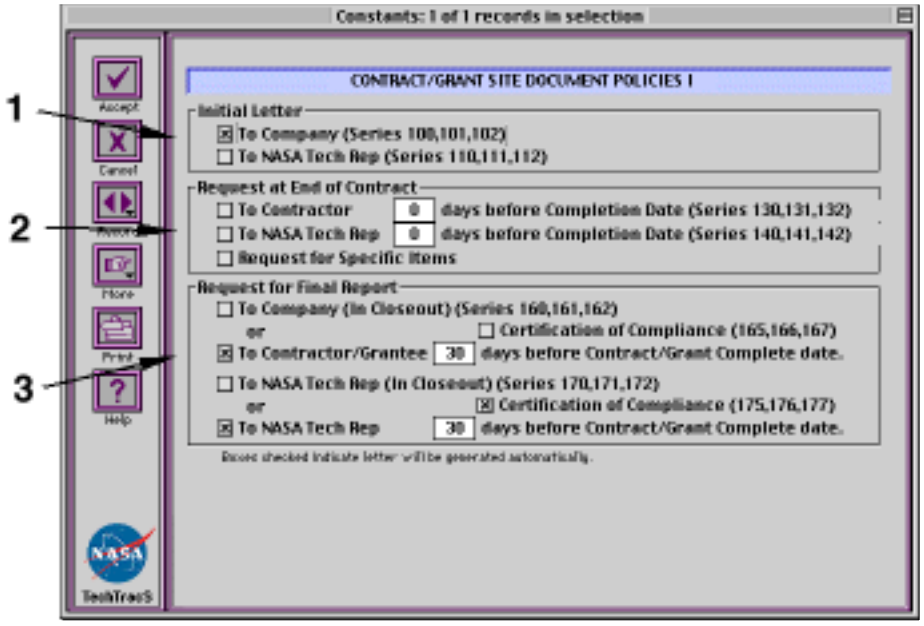
Four fields of information identifying the primary Patent Counsel at the Field Center. This information appears in various reports and on some correspondence. Use the green business card button to activate the People Selector screen in order to select the Patent Counsel from the [People] table.

8) COSMIC

The name of the organization responsible for computer software evaluation, normally COSMIC. Use the green business card button to activate the Company Selector screen in order to select the record from the [Company] table. This information is used to correctly address Form 702 (request to evaluate new technology) and its envelope.

†. Pre-established fields for each field center that do not need to be changed.

Contract/Grant Site Document Policies I



The settings indicated on this page of the Constants record are used to specify the default settings for new Contract/Grant records. Individual Contract/Grant record settings may be specified if desired. Setting any of the check boxes will cause the indicated documentation to be produced at the appropriate time. The specified number of days in some of the options will be applied to the rules that NASA TechTracS employs during the Contract/Grant Scan phase.

1) Initial Letter

To Company (Series 100,101,102)†
To NASA Tech Rep (Series 110,111,112)†

2) Request at End of Contract

To Contractor [nn] days before Completion Date (Series 130,131,132)†
To NASA Tech Rep [nn] days before Completion Date (Series 140,141,142)†
Request for Specific Items

3) Request for Final Report

To Company (In Closeout) Certification of Compliance (or) To Contractor/Grantee [nn] days before Contract/Grant Complete Date.
To NASA Tech Rep (In Closeout) Certification of Compliance (or) To NASA Tech Rep [nn] days before Contract/Grant Complete Date.

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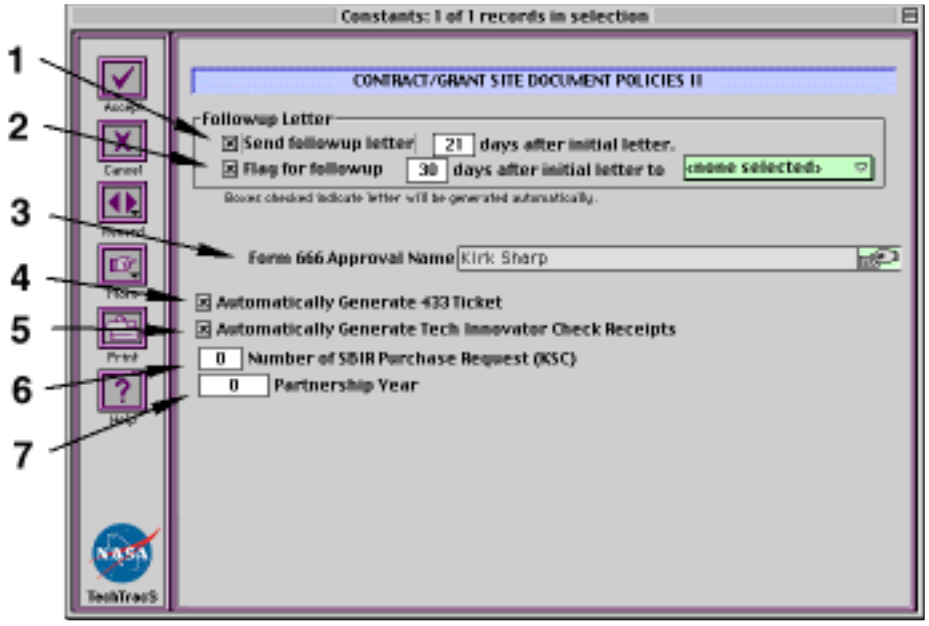
†. The series numbers refer to the 4D Write documents used to prepare the correspondence

Contract/Grant Site Document Policies II



For each of the series of letters specified on the Policies I page there is a matching pair of fields in each Contract/Grant record. The first of these is a date field that records when NASA TechTracS printed the letter/document. The second field records the date of the required response from the correspondent and must be entered by NASA personnel when such response is received. NASA TechTracS can automatically print follow-up letters to those correspondents that have not responded. It can also create an Action Item for further follow-up. The Follow-up Letter section controls these options:

1) Send follow-up letter [nn] days after Initial Letter

Check the box to activate the Follow-up Letter option and specify the number of days that NASA TechTracS should wait before issuing the follow-up letter.

2) Flag for follow-up [nn] days after Initial Letter to [Popup]

Check the box to activate the Follow-up Action Item Flag option and specify the number of days that NASA TechTracS should wait before creating the Follow-up Action Item record. Use the Pop-up menu to select the target for the Action Item record.

3) Form 666 Approval Name

The person named here is referenced on NASA Form 666 (New Technology Transmittal) when it is printed. Use the green business card button to activate the People Selector screen in order to select the appropriate person from the People table.

4) Automatically Generate 433 Ticket

Check this box to print a Form 433 Ticket (Technology Evaluator Assignment) whenever a new Technology record is created. This form assists the Technology Transfer Office in assigning an evaluator to a new technology item.

5) Automatically Generate Tech Innovator Check Receipts

Check this box to print Technology Innovator Check Receipts that are to accompany the Tech Brief Award checks received from NASA HQ when they are sent to the Innovators. The receipts are triggered when the "Check frm HQ" fields on the TECH BRIEF AWARDS page of the Technology Record screen are updated.

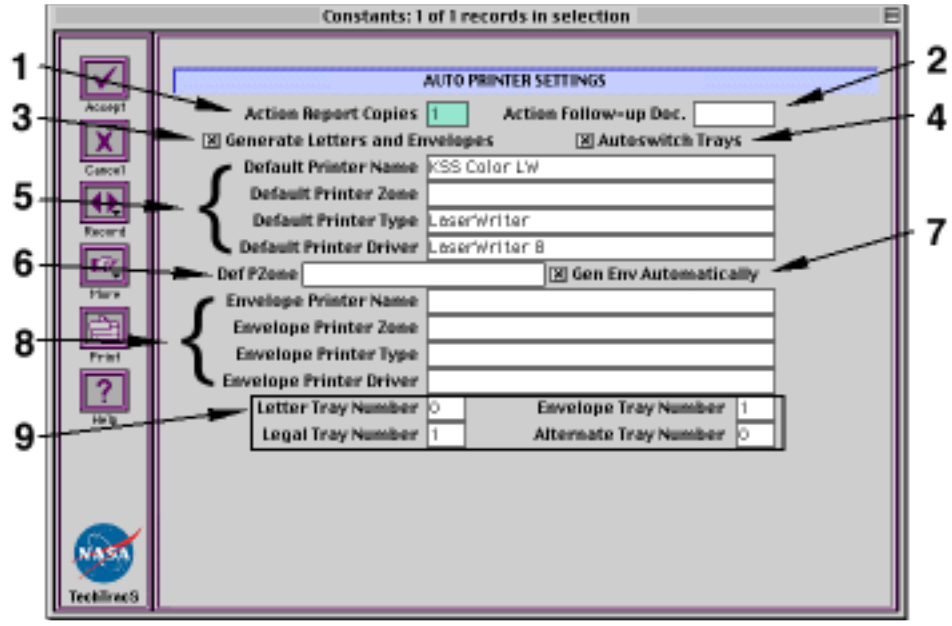
6) Number of SBIR Purchase Request

Contract/Grant custom report for SBIR purchase requests. This report is only used by KSC.

7) Partnership Year

Since the data collection process usually runs past the fiscal year, NASA TechTracS needs to know for what fiscal year is data being collected. Therefore, the Partnership year is used to indicate the fiscal year for Partnership data collection and metric calculation.

Auto Printer Settings



The **Auto Printer Settings** page sets up all of the default information for Auto Agent printing.

1) Action Report Copies [n]

Specify the number of copies of the Action Item Report to be printed. The report is printed automatically once every Monday and lists all incomplete Action Items that are due for completion within the subsequent 14 days.

2) Action Follow-up Doc. [nnnn]

Enter the code of the Document to be used when generating Action Item Follow-ups. See Action Item section for more details.

3) Generate Letters and Envelopes

This is the overall switch for instructing NASA TechTracS to generate letters and envelopes when user activities in the [Contract/Grant] and [Technology] tables meet the programmed documentation rules.

4) Autoswitch Trays

Check this box only if you have a printer that supports switching of trays. Currently this is limited to the LaserWriter printers from Apple Computer that have either envelope or multipurpose trays or both.

5) Default Printer Name/Zone/Type/Driver

Enter, or select from the Popup Choices Window, the specifications for the primary NASA TechTracS printer. These values must be present and correct in order for NASA TechTracS to generate documents automatically.

6) DefPZone

The default zone for a printer if a zone can not automatically be determined.

7) Gen Env Automatically

This check box determines whether NASA TechTracS will automatically generate envelopes for those documents that indicate it.

8) Envelope Printer Name/Zone/Type/Driver

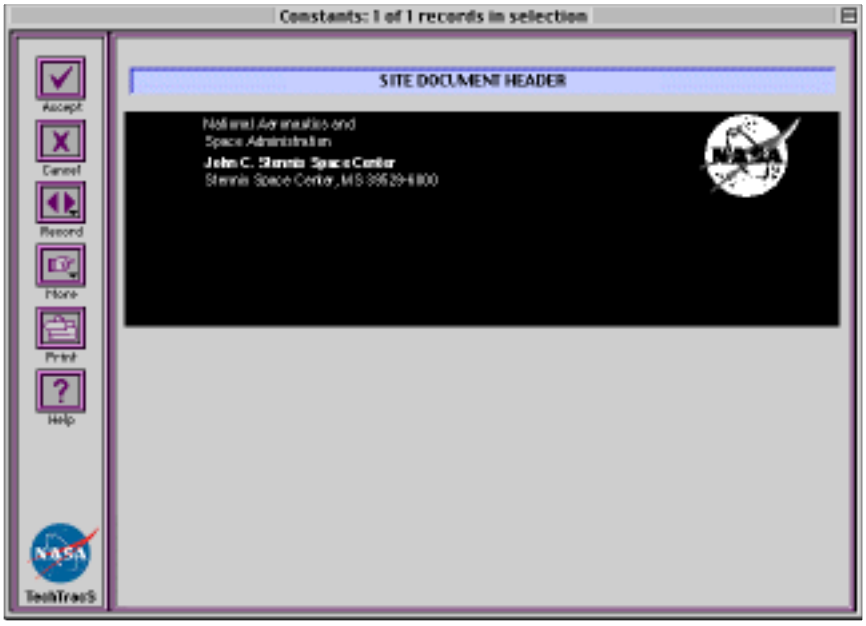
Enter, or select from the Popup Choices Window, the specifications for the primary envelope printer. These values must be present and correct in order for NASA TechTracS to generate envelopes automatically. Typically these fields are the same as for the Default Printer specified above.

9) Letter/Envelope/Legal/Alternate Tray Numbers

Enter the numbers indicating the tray configuration for the printer. For Apple LaserWriter printers, the following numbers are used:

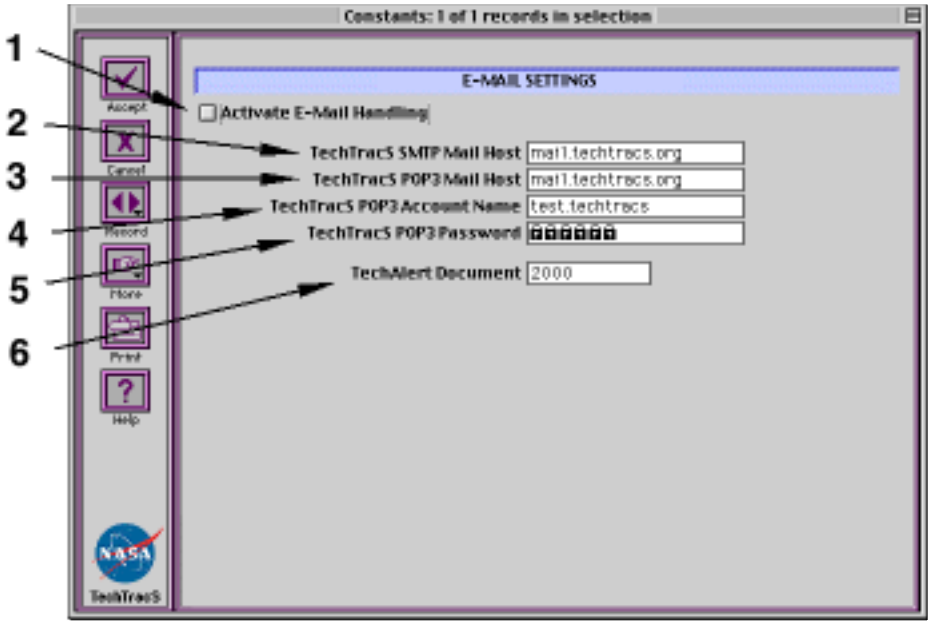
500 Sheet Feeder (if installed): 0
Multi-purpose (manual feed) tray: 1
250 Sheet Feeder (standard): 2
Envelope Feeder (if installed): 3

Site Document Header



This page contains a single picture field into which a letterhead image may be pasted. The letterhead will appear on all forms and letter where appropriate. For the highest output quality, a picture with encapsulated postscript (eps) should be placed here.

E-mail Settings



NASA TechTracS has various electronic mail handling capabilities. Properly configured NASA TechTracS can notify a selected list of recipients whenever a new technology item has been approved for publication. This advance notification, or Technology Alert, can assist NASA in disseminating information about new technology well ahead of the information's actual publication through traditional means. The Tech Alert message can be activated for particular cases by clicking the **Send TechAlert** button on the Tech Evaluation screen in the Technology table.

1) Activate E-Mail Handling

Turn on the e-mail system. This turns on a process on the AutoAgent that periodically checks for incoming mail and responds appropriately. †

2) TechTracS SMTP Mail Host

The internet address of the mail server used to send out-going e-mail.†

3) TechTracS POP3 Mail Host

The internet address of the mail server used to receive incoming e-mail.†

---

†. Pre-established fields for each field center that do not need to be changed.

4) TechTracS POP3 Account Name

The account name the Auto Agent uses to login to the mail server. Each field center Auto Agent uses a unique login. The format is field center code + techtracs@knowledgesharing.com.†
(ex. ksc.techtracs@knowledgesharing.com)

5) TechTracS POP3 Password

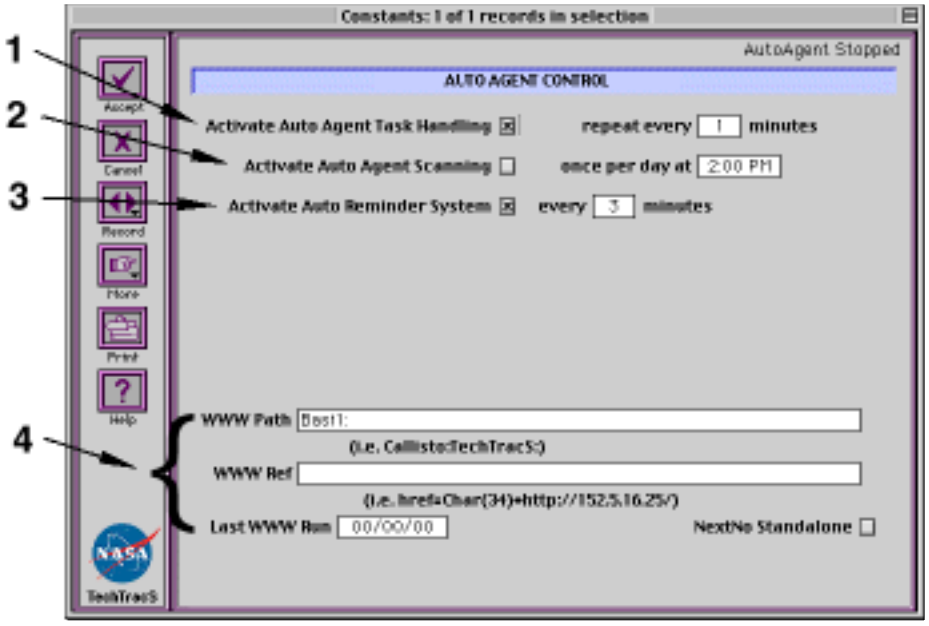
The e-mail password for the account name specified in "TechTracS POP3 Account Name".†

6) TechAlert Document

The record in the Documents table used when a TechAlert is sent. †

†. Pre-established fields for each field center that do not need to be changed.

Auto Agent Control



The **AutoAgent Control** screen has a number of options that control the behavior of the AutoAgent. Once the AutoAgent is running on a client workstation (usually dedicated to the job of running the AutoAgent), its operations can be controlled from the AutoAgent Control screen from any client workstation in the NASA TechTracS network.

1) Activate Auto Agent Task Handling repeat every [nn] minutes

This is the overall switch that instructs the AutoAgent to perform the tasks that have been submitted to it. These tasks are shown in the Active queue in the Process Queue Manager window. Specify how many minutes the AutoAgent should wait before checking for more tasks. Normally 2 minutes is appropriate.

2) Activate Auto Agent Scanning once per day at [nn:nn PM/AM]

This is the overall switch that instructs the AutoAgent to perform daily scanning tasks. See next section for more details. Specify the time of day (in military time format) that the Automatic Scan should take place. This is typically set to the early hours of the morning, say 1:00 AM. This will provide sufficient time for NASA TechTracS to scan the database and produce any required reports or correspondence before the start of the normal working day.

3) Activate Auto Reminder System every [nn] minutes

Individual users can create rules in the reminder system. When a reminder rule, or event, is activated, it will appear in the Reminder window and can send an e-mail to alert the user that a Reminder event has occurred.

4) WWW Path

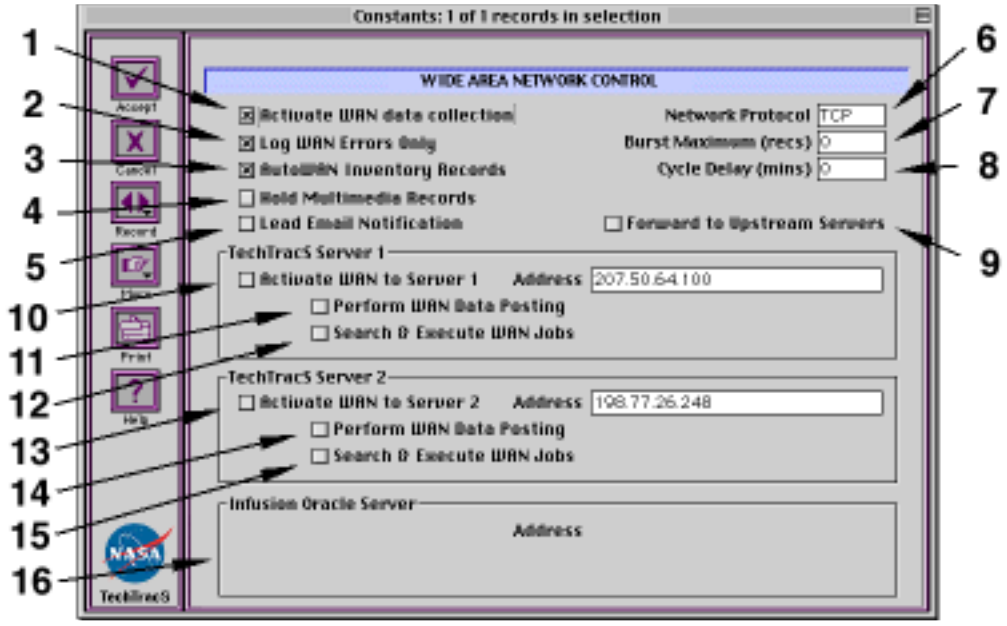
The destination path used for the TechFinder data export. The data is then indexed by a Full Text web search engine (Apple E.G.). The information is then available for searches on the web through the search engine. †

5) WWW REF, Last WWW Run, NextNo Stand-alone

These fields are used by Knowledge Sharing System for support purposes only. †

†. Pre-established fields for each field center that do not need to be changed.

Wide Area Network Control



The NASA TechTracS WAN is an AutoAgent process that replicates new records or record changes from the field centers to the Agency Wide NASA TechTracS Database at NASA Headquarters. From there, records marked as public access are replicated to the NTAS TechFinder machine for web searches and to the National Technology Transfer Center (NTTC) for public information assistance. At the Field Center level, the AutoAgent is responsible for replicating records across the WAN to the Agency Wide NASA TechTracS Server. The Agency Wide AutoAgent replicates records to the NTAS NASA TechTracS Server and NTTC NASA TechTracS Server. The NTAS NASA TechTracS Server does not utilize an AutoAgent and does not replicate records. The NTTC does utilize an AutoAgent, but it does not replicate records.

The NASA TechTracS architecture contains three levels of machines; Field Center, Agency Wide, and Public Access. These machines duties are defined by their place in the architecture as illustrated by the figure below.

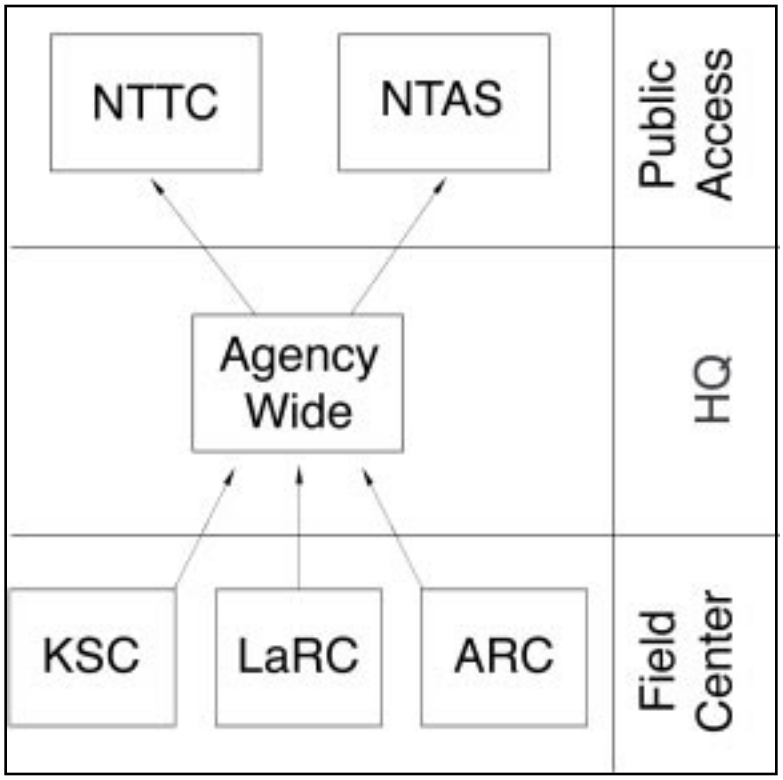


Diagram of the Wide Area Network structure

	Activate WAN Data Collection	Server 1	Server 2	Forward to Upstream Servers	WAN Data Post WAN Stats
NTAS, NTTC	OFF	OFF	OFF	OFF	OFF
Agency Wide	OFF	ON	ON	OFF	ON
Field Center	ON	ON	OFF	ON	ON

Settings of the three levels of implementation for the WAN Control Page

1) Activate WAN data collection

This option causes the AutoAgent to create WANpost records. WANpost records comprise a queue of changes in the local NASA TechTracS database that can be replicated to Agency Wide. This option is normally only activated at the Field Center level.

2) Log WAN Errors Only

When this option is checked the detail of the WAN log includes not only errors, but all WAN actions. This option is used for support purposes only.

3) AutoWAN Inventory Records - Not currently used.

4) Hold Multimedia Records

Prevent the WAN delivery of images to the Agency Wide Server.

5) Lead Email Notification - Not currently used.

6) Network Protocol [TCP]

TCP is the protocol of choice on the internet.

7) Burst Maximum (recs) [n]

The maximum number of records sent in one WAN connection. A burst size of 500 is typical.

8) Cycle Delay (mins) [nn]

The delay between WAN connections. A delay of 1 minute is typical.

9) Forward to Upstream Servers

Replicate database changes, if they are public access, to NTAS and NTTC. If this option is deactivated, no records will be replicated from Agency Wide. This option is usually only activated at the field center.

10) Activate WAN to Server 1, Address [nnn.nnn.nnn.nnn]

At the field center level, Server 1 is the Agency Wide NASA TechTracS Server. At the Agency Wide level, Server 1 is the NTAS NASA TechTracS Server. At the NTAS and NTTC level, this option is deactivated.

11) Perform WAN Data Posting

If *Activate WAN Data Collection* is selected, WANPost records are created when the database is changed. When *Perform WAN Data Posting* is activated, those WANPost records are replicated to the NASA TechTracS Server defined by the address in Activate WAN to Server 1. If *Perform WAN Data Posting* is deactivated the WANPost records will continue to accumulate.

12) Search & Execute WAN Jobs

When this option is activated, the field center Auto Agent, during a WAN connection to the Agency Wide NASA TechTracS Server, will look for special jobs to execute.

13) Activate WAN to Server 2, Address [nnn.nnn.nnn.nnn]

At the field center level, this option is deactivated. At the Agency Wide level, Server 2 is the NTTC NASA TechTracS Server. At the Agency Wide level, Server 1 is the NTAS NASA TechTracS Server. At the NTAS and NTTC level, this option is deactivated.

14) Perform WAN Data Posting

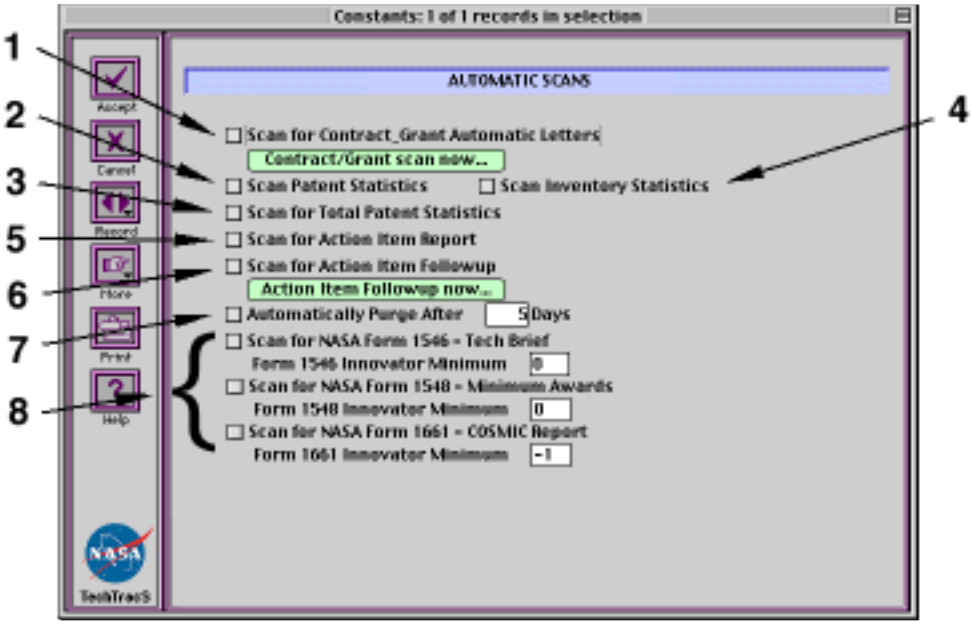
If *Activate WAN Data Collection* is selected, WANPost records are created when the database is changed. When *Perform WAN Data Posting* is activated, those WANPost records are replicated to the NASA TechTracS Server defined by the address in Activate WAN to Server 2.

15) Search & Execute WAN Jobs

This option is not normally used for Server 2.

16) Infusion Oracle Server - This feature is not available yet.

Automatic Scans



The **Automatic Scans** screen controls AutoAgent activities during its once-per-day scan of the database.

1) Scan for Contract/Grant Automatic Letters. Contract/Grant scan now... button.

Check this box in order for the AutoAgent to scan every Contract/Grant record in the database. Each Contract/Grant record is checked against a set of rules that determine whether any action, such as printing a letter, is required. If such an action is required, NASA TechTracS places a suitable task on the Active queue for automatic processing. Click the **Contract/Grant scan now...** button to cause the scan to be execute immediately rather than wait for the next scheduled execution.

2) Scan Patent Statistics

When checked, this option will cause the AutoAgent to examine the database during the once-per-day scan and gather statistics for reporting purposes. This information is ultimately uploaded to NASA TechTracS at NASA HQ.

3) Scan for Total Patent Statistics

This option is only appropriate for the Agency Wide level. When checked, this option will cause the AutoAgent to examine the database during the once-per-day scan and accumulate Field Center statistics for reporting purposes.

4) Scan Inventory Statistics

This option is only used at the Agency Wide level to generate and graph inventory statistics.

5) Scan for Action Item Report

Check this box to cause the AutoAgent to produce the Action Item Report automatically every Monday.

6) Scan for Action Item Follow-up. Action Item Follow-up now... button

Check this box to cause the AutoAgent to scan all Action Items to see if any items require a follow-up letter to be printed. If properly configured, enclosures and an envelope may accompany the letter. Click the **Action Item Follow-up now...** button to cause the scan to be execute immediately rather than wait for the next scheduled execution.

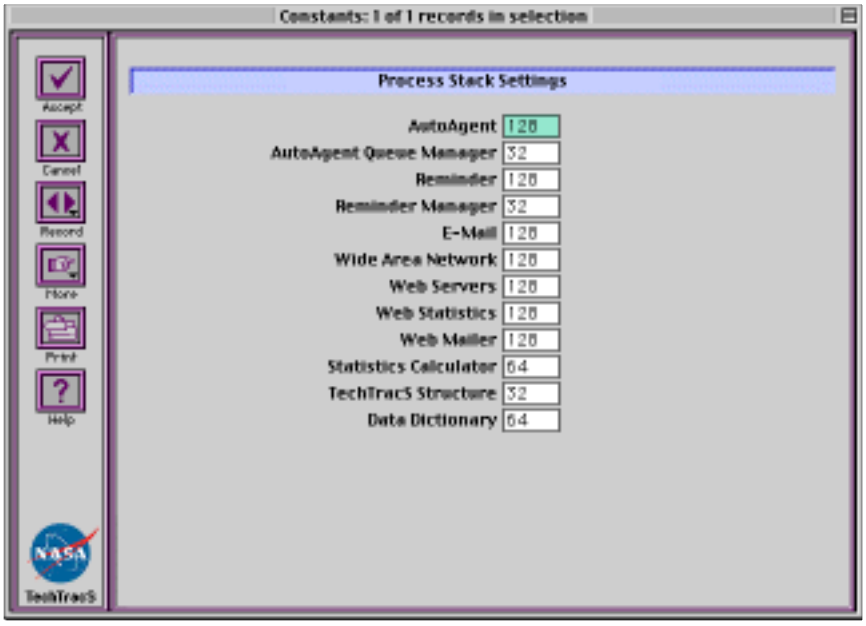
7) Automatically Purge after [nn] Days

Check this box and specify the number of days before completed AutoAgent tasks are automatically purged from the database. AutoAgent tasks, when complete, are placed in the *Completed* queue where they accumulate. Individual tasks may be requeued to the *Active* queue or deleted, or all completed tasks may be deleted, by clicking appropriate buttons in the Queue Manager window. If the *Automatically Purge* check box is checked, the AutoAgent will remove all completed tasks from the queue afte the specified number of days has elapsed.

8,9,10) The final three options (Scan for NASA Form 1546, 1548, 1661...

These check boxes will cause the AutoAgent to examine Technology Innovator records to see if any Innovators are due to be reported to NASA HQ on the appropriate form for awards processing. If so, and there are at least as many Innovators to be reported as specified in the Minimum fields, the appropriate form will be printed. The reports are printed in draft form only so that they can be checked for accuracy. If, or when, the information is accurate, the report must be printed by a manual request in order for the database to be properly updated.

Process Stack Settings



Some processes in NASA TechTracS require more memory than others. The process stack settings allow the memory allocation to the individual processes to be fine tuned. Every field on this screen represents the number of kilobytes of memory set aside for various processes on the NASA TechTracS AutoAgent. These setting should only be changed under the guidance of Technical Support.

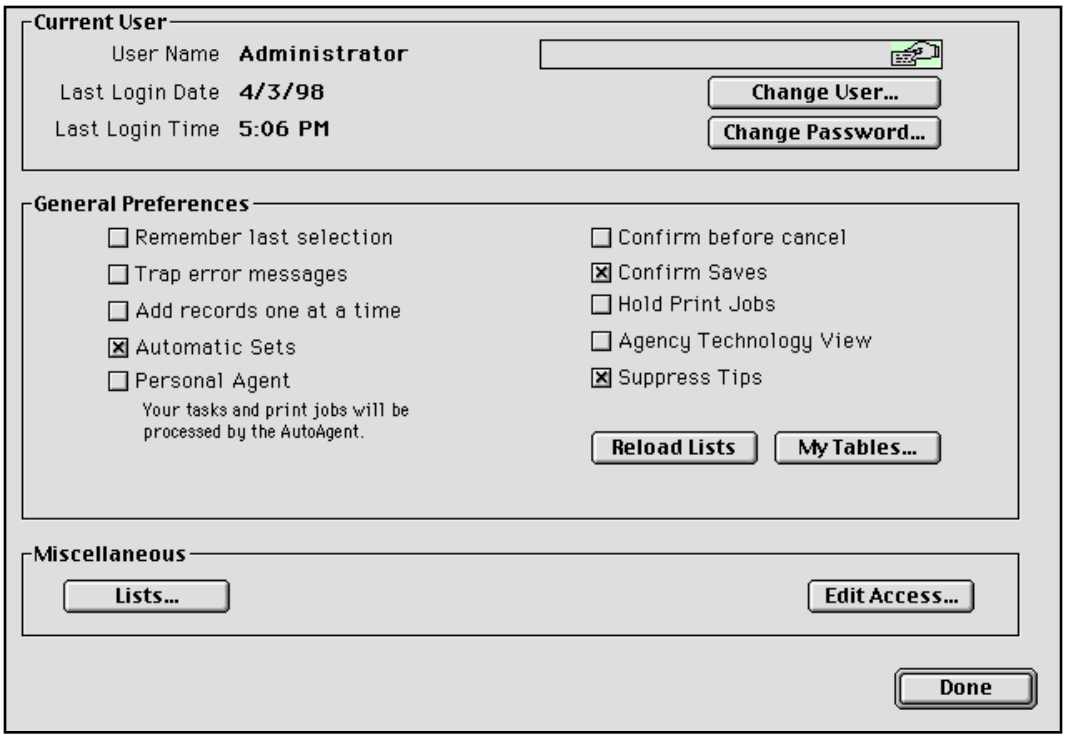
List Management

List Manager
Noise List
Keywords

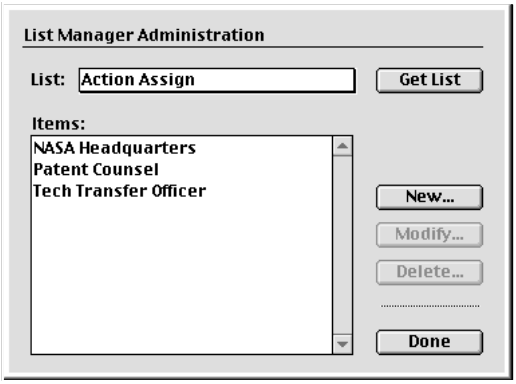
Overview

Records in the List tables are used in popup menus throughout NASA TechTracS. They determine classifications, dollar amounts, and many other choices. Many of the popup lists can be edited to suit the needs of a particular field center. However, care should be taken when editing lists. Consult with Technical Support before editing lists.

List Manager



Preferences Dialog



The Database Administrator can edit lists with the List Manager Administration Dialog. To access the List Manager, select the "*Preferences*" item from the "***File***" menu. In the Miscellaneous section of the Preferences screen click the **Lists** button. Select the list to edit from the "List" popup menu, then click **Modify**, **New**, or **Delete** buttons. Click the **Done** button to apply the changes. Lists can also be edited from the Lists Table on the "Data Control Panel".

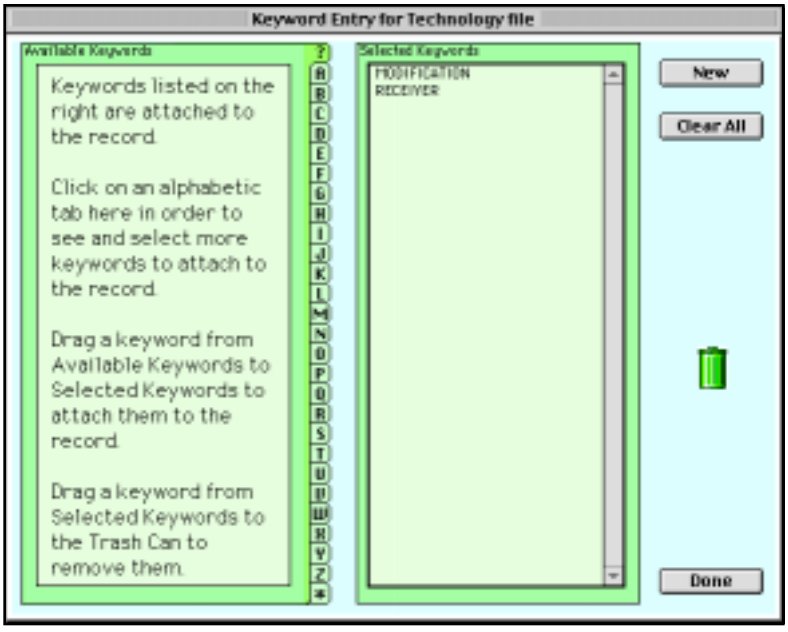
Noise List

Another list in the List Table is the noise list. This list contains noise words such as **the**, **a**, **an**, **of**, and many more. The noise list is only used when NASA TechTracS automatically generates keywords from the titles of Technology, Contract Grant, and Success Story records. Records in the noise list are not used as keywords.

Keywords

The [Technology], [Contract Grant], [Success Story], [People], [Company], and [TOPS] tables also have their own list of keywords. The [Technology] keywords are stored in the [KeyTechnology] table, Contract Grant keywords in the [KeyContract] table and so on. These keywords can be added at the discretion of the user from the keyword lookup screen.

The Keyword Lookup screen can be accessed on the Abstract/ Keywords page from the “More” popup in the [Technology] table. [Contract Grant], [Success Story], [People], [Company], and [TOPS] tables each have similar pages for keywords. The keywords scrollable list shows all the keywords currently associated with the selected record. Click the + button on the keywords scrollable list to add keywords. Associated keywords can be removed by highlighting the name in the scrollable list and clicking the - button.



The Keyword Lookup screen has two window panes. The left window pane initially displays instructions and the right pane displays the keywords currently associated with the selected record. The left pane also has a tabbed letter list down the side and a * tab. Clicking on any letter tab displays a list of keywords starting with that letter. The lists of keywords from the letter tabs are loaded from the xKeyword table. The [xKeyword] table is a master lookup table of all available keywords.

Clicking the * tab displays keywords that do not begin with the letters A-Z. To associate a keyword with the selected record, double-click it or drag it from the left pane to the right pane. To disassociate a keyword, double-click it or drag it from the right pane to the trash icon. Click the **New** button to add a new key word to the keywords list. Click the **Clear All** button to remove all associated keywords from the selected record. New keywords are automatically associated with the selected record. When finished, click the **Done** button.

Keyword Maintenance

Steps should be taken to remove redundant keywords, user entered noise words, and review keywords for applicability. The quality of database searches using keywords is directly related to the quality of the keyword lists.

xKeywords Table

General maintenance can be performed by working in the xKeyword Table.

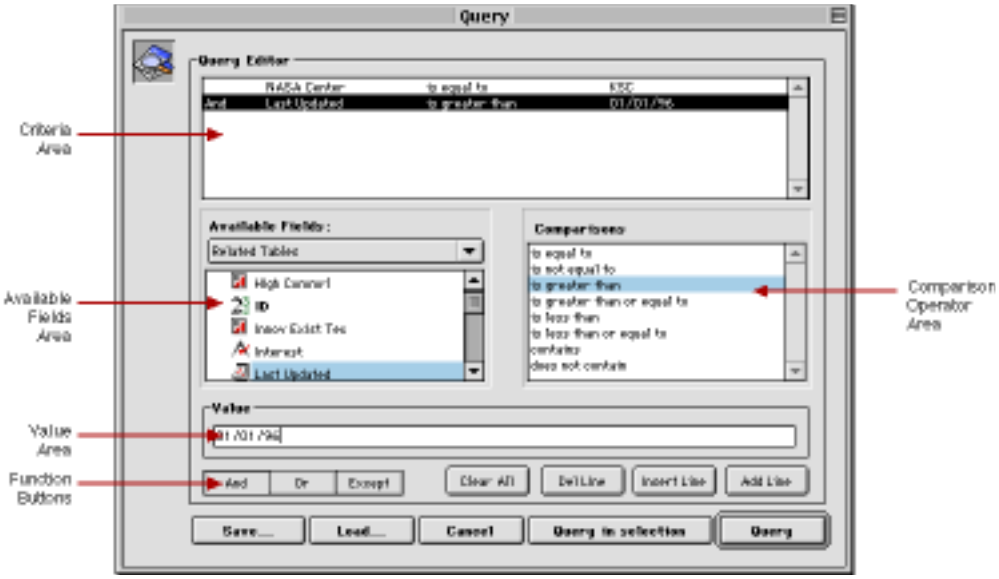
Query Editor

Getting Started
Beginning Issues
Related Tables
Icon Definitions
Tutorials

Overview

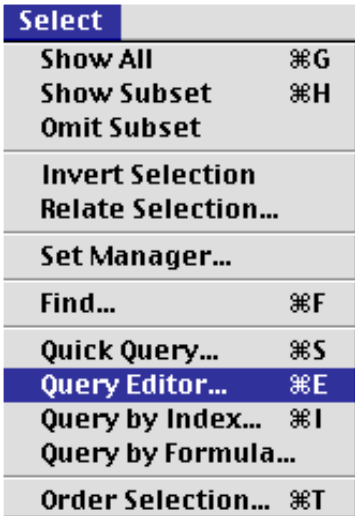
The Query Editor offers the ability to search for records that match various criteria. For instance, it is possible to look up and retrieve records on all people that have the same area code or query all people that have the same job function. Of all the searching methods available in NASA TechTracS, the Query Editor is the most powerful.

Getting Started

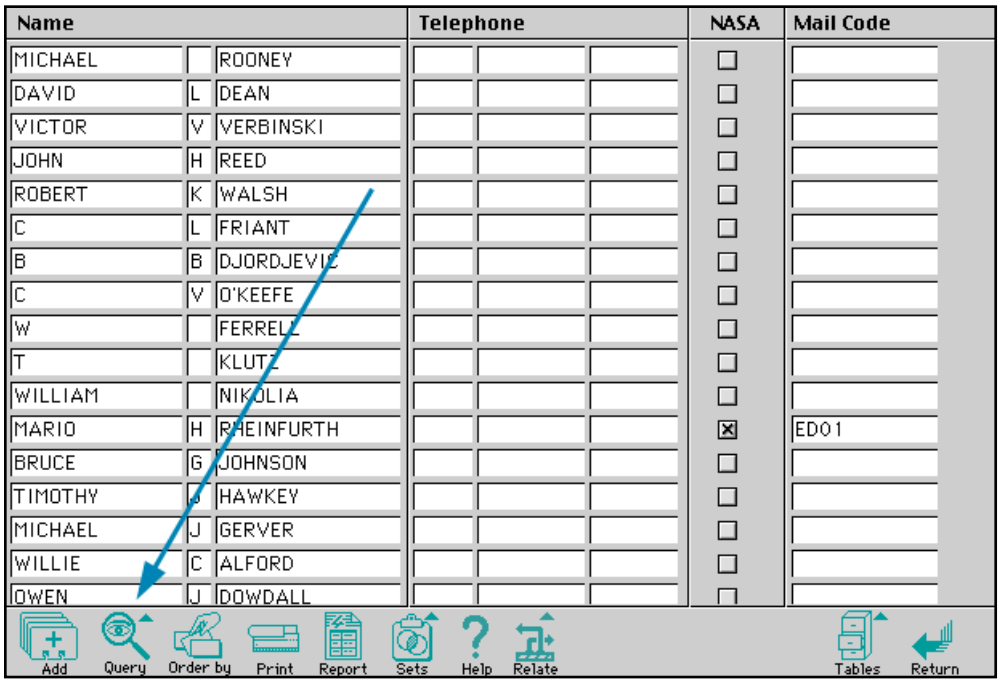


There are three ways that the Query Editor can be invoked.

- From the "*Query Editor*" item in the "***Select***" menu.



- From the bottom of the List Screen.



- By pressing `Command-E` (`Control-E` on Windows) on the keyboard.

Beginning Issues

The Query Editor is a general-purpose editor that can be used to create simple or compound queries:

- Compound searches can be created linked with the **And**, **Or**, or **Except** conjunctions. For example, the Query Editor can be used to perform a query for all Technologies whose NASA Center is KSC and that have been updated since January 1, 1996, as in the example on the previous page.
- The choice of searching through the current selection of records or all the records in the table is available.
- Queries can be saved to disk and reopened to repeat the query.
- Fields in the current table and fields in related tables can be searched.
- Subfields in the current table or subfields in related tables can also be searched.

TIP: The Query Editor window can be expanded by dragging the lower right edge of the window.

The Query Editor consists of the following areas:

- **Criteria area:** This area displays the query as it is created or after it is loaded from a disk file.
- **Available Fields area:** This area displays a hierarchical list of the fields in the current table. Indexed fields are shown in boldface. If there are related tables, the foreign key fields in the current table can be expanded to display the fields in the related tables. The Pop-up menu changes the Available Fields to show All Tables (not normally used) or Master Table which will list the fields without showing the foreign key link to related tables.
- **Comparison Operator area:** This area displays a list of comparison operators. **Conjunction buttons:** This area contains three buttons that correspond to conjunction operators that can be used to join the current simple query to the previous simple query.
- **Value area:** This contains the value for which to search.
- **Query in selection button:** This button performs the query only on the records in the current selection.
- **Query button:** This button performs the query on all the records in the current table.
- **Query editor buttons:** This area is used to save queries, load other queries from disk, cancel the query, or execute the query.

Tip: Both the Available Fields area and the Comparison Operator area can respond to keyboard input (known as type-ahead). To use this feature, activate the area by tabbing until the area is outlined by a double borderline. At this point, any keyboard input will cause the display to auto-scroll to the nearest matching item in the list.

Icon Definitions

Icon Definitions

	Alpha field
	Text Field
	B(olean Field (Yes/No) (T ue/False)
	Date Field
	Integer Field
	Long Integer Field
	Real Number Field
	Time Field

Query Examples

To retrieve all of the records that have an area code of 919:

- **Available Field** **Criteria** **Value**
  Area Code is equal to 919

To retrieve all of the records of people that live in the State of CA:

- **Available Field** **Criteria** **Value**
  State is equal to CA

To retrieve all records of people that were updated after a certain date:

- **Available Field** **Criteria** **Value**
  Last Updated is greater than 02/13/96

Wildcards

In order to search for records that begin with a specified string, use the “is equal to” operator and enter the wildcard character (“@”) at the end of the value to search for. For example, to search for companies whose names begin with the string “Boe”, use the following query:

- **Available Field** **Criteria** **Value**
  Name is equal to Boe@

Compound Queries

When a compound query is built, 4th Dimension evaluates the simple queries in the order in which they appear in the Query editor (i.e., from top to bottom). There is no precedence among the conjunctions. That is, **And** doesn’t have priority over **Or**. Thus, if more than two simple queries are used in building the compound query, the order in which the simple queries are entered can affect the results of the query.

If a third simple query is required, the condition can either be added to the existing compound query or inserted between the first two simple queries. To add the new query to the end of the existing queries, click **Add Line**. To insert the new query, highlight the last query and click **Insert Line**. The new query is inserted above the line just highlighted.

Saving a Query

If a complex query is established, the query can be saved for later use by using the **Save** button.

Note: Only the definition of the query is saved, not the results of the query.

Loading a Query

A saved query can be loaded by clicking the **Load** button and selecting the file that contains your query. The query can then be reapplied.

Tutorials

Tutorial #1: Sizing Window and Type Ahead

1. Select **Technology** table from the data control panel.
2. Click **OK**.
3. Choose **Query Editor**.
4. Locate the right hand corner of the **Query Editor** dialog and stretch the window.
5. For Mac users, perform the following:

   Click the tab key once. Notice the double band or square around the available field list indicating the focus or active area of the dialog.

   Tab again. Notice the blinking cursor in the value box.

   Tab again. Notice the double band or square around the comparison list.

   Tab again. You should be back to the available field list. Type the letter T.
6. For Windows users, perform the following:
   Tab until you see notice a double band around the field list indicating that it is the active area.
7. Click on the down scroll triangle for the available field list.
8. Click twice on the up arrow key. Notice how you jumped back to your original type ahead point and moved the field selection up two fields.

Topics Covered: **Sizing Window, Type Ahead**

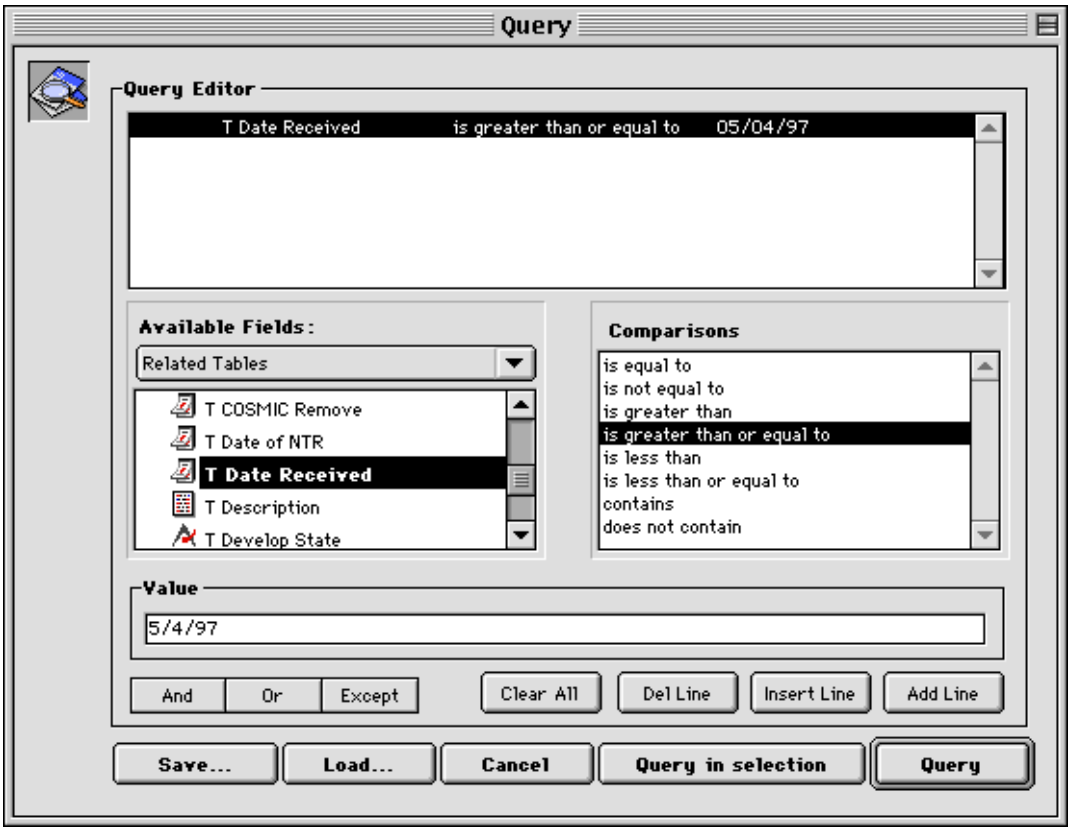
Tutorial # 2: One Statement Query

Find technologies that were reported in the last 12 months.

1. Locate **T Date Received** field and click it to select it.

   TIP: Field is bold which indicates that it is indexed and the query should be fairly quick.
2. Click on the comparison **greater than or equal to**.

3. Type in the value “5/4/97”.



4. Click on **Save** button to save query as '”TechQuery1.4DF"

5. Click on **Query** button.

Note: You can share 4D query editor files with other NASA TechTracS users. To share a 4D query editor file created on a Mac to a PC user, the filename must have the extension ".4DF" (ie myquery.4DF). Hence, you could email the document as an enclosure to other users.

Topics Covered: **Indexed Fields, Saving Query, Single Statement Quer**y

Tutorial # 3: Relate Query & Query Selection

Find technologies that were reported in the last 12 months where the award date on the contract is greater than or equal to 5 years ago from todays date.

1. Locate the **Contract Number** field. Turn down the triangle to show the fields from the related **Contract_Grant** table.

2. Tab to make the available field list the active area. Type W. Type A. Type W. Type A.

Notice that the type ahead is contained with the turned down field list from the **Contract_Grant** table.

3. Notice that the **Company Code** field in the **Contract_Grant** table field list has a triangle next to it. Turn the triangle down to show the fields from the **Company** table. (The **Company** table is related to the **Contract_Grant** table which is related to the **Technology** table.) This means that we can search for Technologies based on fields from the Company table.

4. Turn up the **Company Code** triangle.

5. Locate the **Award Date** field and click on it.

6. Click on the comparison **greater than or equal to**.

7. Type in the value "5/4/93".

8. Click on **Query Selection** to query only against the records returned from Tutorial #3.

Topics Covered: **Query Selection**

Tutorial # 4: Multi Statement

Find technologies that were reported in the last 12 months where the award date on the contract is greater than or equal to 5 years ago from todays date.

1. Select ***"Query Editor"*** item from the ***"Report"*** menu.

2. Load "TechQuery1.4DF"

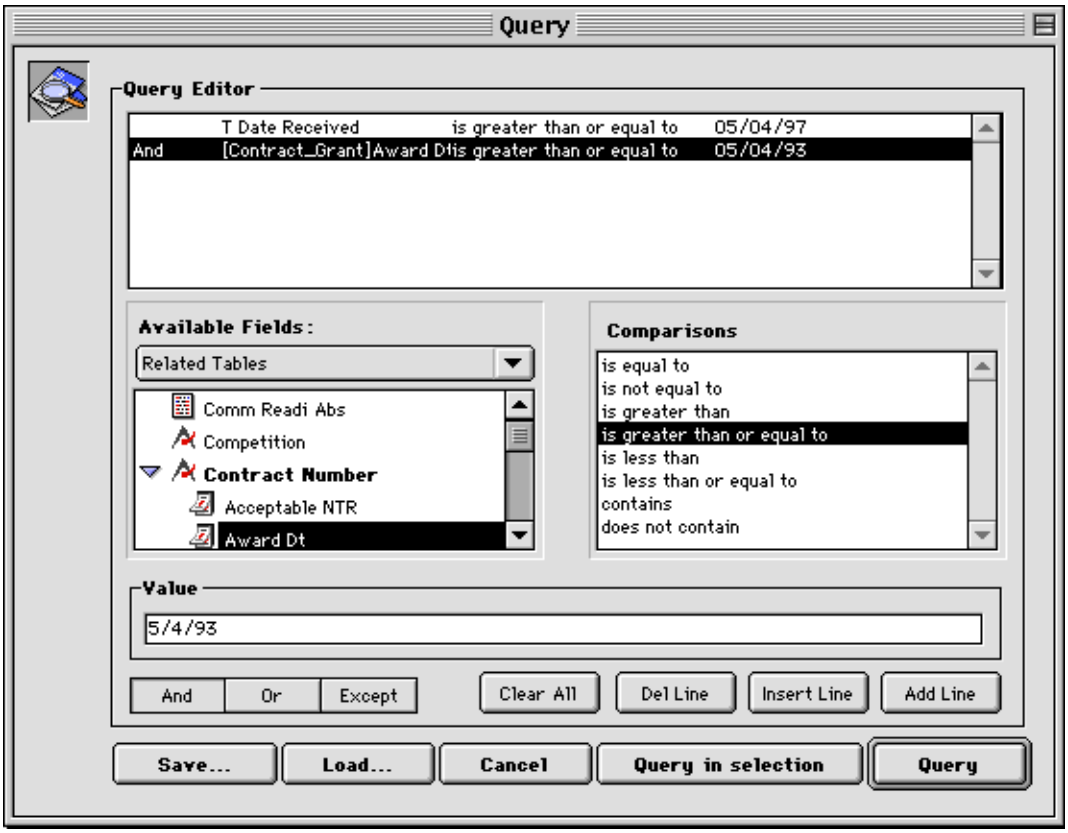
3. Click on **Add Line** button.

4. Tab once. Type "CON". (If you type fast enough you should have typed ahead)

5. Click on the **Award Date** field.

6. Click on the comparison **greater than or equal to**.

7. Type in the value "5/4/93".



8. Click on **Save** button to save query as "TechQuery2.4DF"

9. Click on **Query** button.

Topics Covered: **Multi Statement Query**, **Add Line**

Tutorial # 5: Using Wildcard @

Find technologies where the contract number begins with NAS.

1. Select ***"Query Editor"*** item from the ***"Report"*** menu.

2. Select the **Contract Number** field.

3. Select the comparison **greater than or equal to**.

4. Type "NAS@" in the value box.

5. Click **Query** button.

Topics Covered: **Wildcard**

Class Exercise #1

Find out how many technologies have been reported by contractors with headquarters from the state of Florida in the last 5 years? Save Query as "TechQuery 3.4DF"

Quick Reports

Creating a New Quick Report
Loading and Saving a Quick Report
Interface Elements of the Quick Report Editor
Using Related Fields
Resizing Areas in the Editor
The Quick Report Pop-up Menus
Working with the Quick Report Editor
Tutorials

Overview

The Quick Report editor is a powerful report generation tool available to the user in NASA TechTracS. From any table in the database the user may report on a selection of records in any format desired. The reports may contain calculations, break areas, and formulas. The formula editor gives the user access to the 4D Language as well as the NASA TechTracS special procedures to manipulate data for the current report. Fields can be shortened, lengthened, concatenated or mathematically altered to get the desired output. Reports can be formatted with font, size, style, and sorting on multiple levels. The user can also specify headers and footers in the quick report with text entries or the insertion of special codes for page number, date, and time. Quick Reports can be relational allowing included fields in any quick report from any related table.

Quick Reports can perform complex tasks that otherwise require lengthy programming effort. Because of it's horizontal and vertical processing, the Quick Report Editor can create Cross-tabulation reports. These reports may be saved to a user's disk for later use or simply used one time and then discarded.

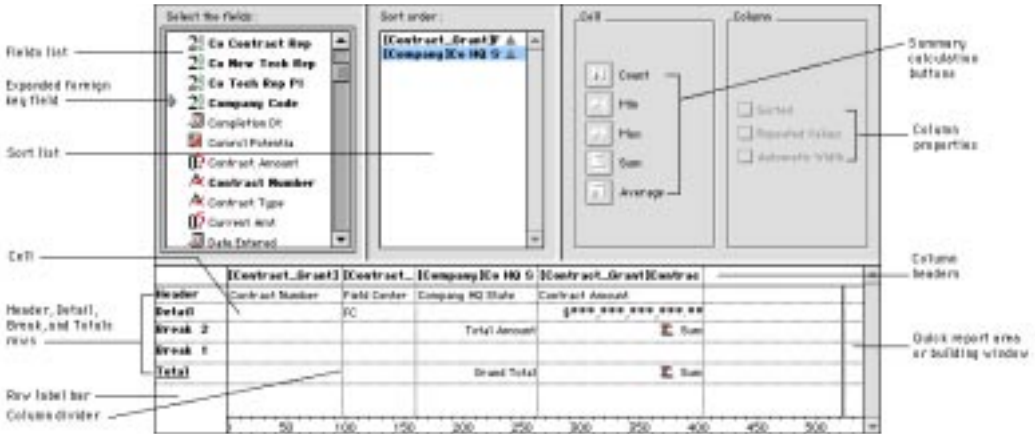
Creating a New Quick Report

To design a Quick Report create a selection of records and select "*Quick Report...*" from the "***Report***" menu when in the list view of any table in NASA TechTracS. At this point, the Quick Report editor is displayed. If an existing report is displayed, choose "New" from the "File" menu to begin a new quick report.

Loading and Saving a Quick Report

To save the Quick Report, select "*Save*" or "*Save As..*" from the "***File***" menu. To load an existing report, select "*Open*" from the "***File***" menu. Quick report files in 4D for Windows are denoted by the file extension ".4QR".

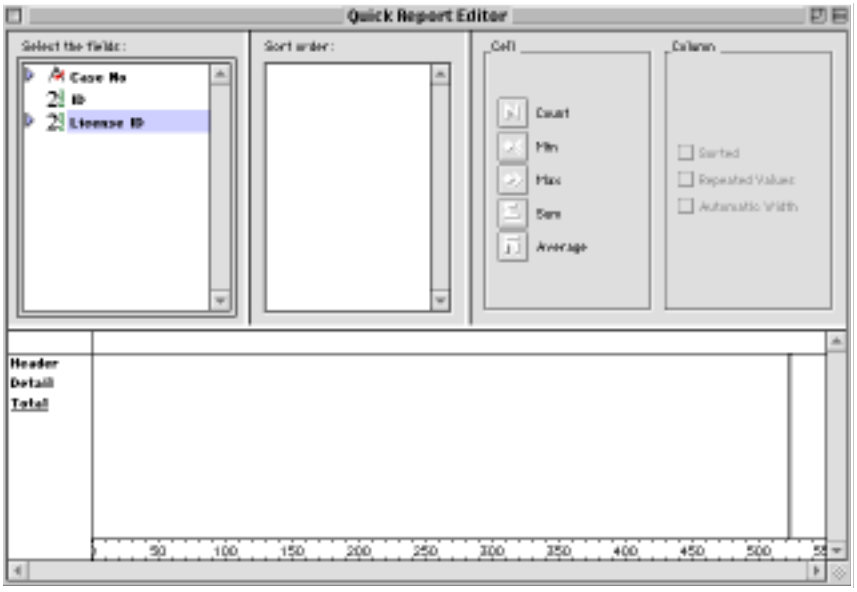
Interface Elements of the Quick Report editor



- Fields list: displays fields in the current and related tables.
- Sort list: displays the sort order assigned to the report and indicates whether each sort level is ascending or descending. If the report contains summary calculations from groups of records, sort the current selection on one or more fields. The user change the order of fields in the sort list by dragging the field name to the desired position in the list.
- Quick Report area: use this area to design the report by dragging fields, adjusting column widths, and adding or deleting breaks.
- Summary calculation buttons: use these buttons to place summary calculations in the Break and Total areas of the report.
- Column properties: use these check boxes to set the following characteristics for each column in the report: automatic width, Column Header, Detail, Break, and

Totals rows repeated values in a Break column, and whether the column will be sorted.

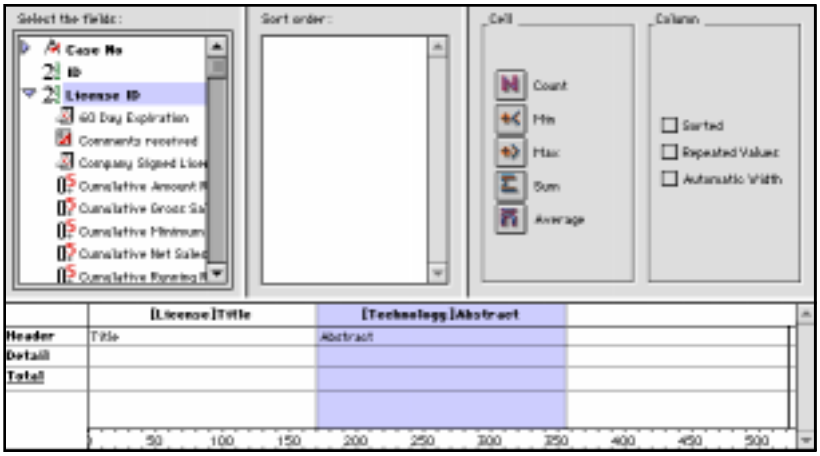
- Sorted: to sort records on the selected column.
- Repeated Values: use this check box to tell the Quick Report editor to repeat the values in a Break column. If not selected, the Break value is displayed only once.
- Automatic Width: Click to request that the Quick Report editor compute the width of the selected column based on the maximum length of the contents of the column. The sizing is done only at the time the report is printed. We can check this option for each column individually. The check box does not refer to the entire report. If the Automatic Width check box is not checked for a column, the user may modify that column's width by dragging column indicators.
- Column dividers: indicate the boundaries between columns of the report.
- Right margin marker: indicates the right margin of the report. The right margin marker is meaningful only when no columns have the Auto Column Width check box selected. In order to view the right margin, scrolling horizontally may be necessary.
- Column header: displays the names of fields or formulas added to the report.
- Row label bar: identifies rows Header, Detail, Break, and Total.
- Header row: contains information that appears in the printed report above the records. The Quick Report editor automatically places field names in the Header row, but we can modify its contents.
- Detail row: prints information from individual records and will be repeated in the printed report for each break.
- Break and Totals rows: These rows display summary calculations and any associated labeling. The Break row displays summary calculations for each subgroup in the report and the Totals row displays summary calculations obtained from all records in the current selection.
- Cells: the intersection of a row and a column.



Using Related Fields

NASA TechTracS is comprised of many tables which may or may not contain all of the information needed for a report. If the table currently being viewed does not have a field needed for a report, get the field from a related one table. Fields from a related many table cannot be obtained it. It is found that a report needs fields from a related many table, the report can be moved to that table. The tables in NASA TechTracS are linked via a key field for each relationship. The primary key for each table identifies each of its records as unique while the foreign key or keys for a table are not unique and serve to link the table to one or more related one tables. The names of fields in related tables can be viewed by expanding the foreign key fields. A foreign key field has a plus sign (on Windows) or a triangle (on Macintosh) to its left.

Pictured below is an example of reporting from the [License Technologies] table including fields from the [License] table and the [Technology] table:



Resizing Areas in the Editor

The various lists and display areas in the Quick Report Editor can be resized. Areas that can be resized are bordered by a raised line. To resize an area in the editor, move the pointer over the area border (the pointer changes into a resizing pointer) and drag the border up or down, or left or right to resize the area.

The Quick Report Pop-up Menus

The Quick Report Editor has hidden pop-up menus that allow easy access to certain row, column, and cell operations. There are separate pop-up menus for row, column, and cell operations. To use a pop-up menu, position the pointer in a cell, a row label, or a column heading and hold down the mouse button. Menu commands that are inappropriate for the particular row, column, or cell are disabled.

Working with the Quick Report Editor

Selecting Rows, Columns, and Cells

- To select a row, click on the Header, Detail, Break, or Total markers on the row label bar to the left of the Quick Report form or click in a row to the right of all columns in the Quick Report form.
- To select a column, click above the Header row of a column.
- To select a cell, click the cell.

Adding and Modifying Text

The user can add or modify text in the quick report form to label parts of the report. For example, if requesting summary calculations, label them by adding text to other cells in the Break and Total rows. Add and modify text as follows:

- Edit the text that 4D automatically adds to the Header row of the report.
- Insert text in empty cells of the Break and Totals rows.
- Insert the value of a Break field in the Break rows.
- Specify the font, font size, justification, and style for any text that appears in the report

Adding Text

To add text in a report cell:

- Click twice on an empty cell in the quick report form. A text insertion point appears in the cell. If entering a label for a summary calculation, select another cell in the same row as the cell containing the calculation icons. Text cannot be entered into the same cell that contains summary calculations.
- Type the text in the cell.

Modifying Text

To modify text in a cell:

- Drag across the text in the cell to modify.
- Type the new text in the cell.

Specifying Font Attributes

While designing the quick report, the user can specify different fonts, font sizes, justification, and styles. Apply these specifications to text, data, and summary calculations within rows, columns, or cells in the quick report. If assigning specifications to the Detail row of the report, results cannot be seen until a preview or print of the report. Specify font attributes using either the Quick Report menu commands or the Quick Report pop-up menu.

To specify font attributes using the Quick Report menus:

- Select the column, row, or cell where we want to apply the font.
- Choose a font from the "***Font***" menu or choose a font size, style, or justification from the "***Style***" menu. 4D applies the font to any text, data, or summary calculations that appear in the selected area.

To specify font attributes using the Quick Report pop-up menu:

- Hold down the mouse button on the row label, column header, or cell to which we want to apply the font attributes. A pop-up menu appears.
- Use the Font, Size, Style, or Alignment hierarchical menus to change the font attributes as desired.

Adding Columns to the Report

Create columns by dragging field names from the Fields list into the quick report area.

To Add a Column

- Drag the name of a field to the right of existing columns in the Quick Report area and release the mouse button. 4D creates a column for the field and places the field name in both the column header and the cell in the Header row.

By default, 4D prints the field names as column heads at the top of each page in the quick report.

If a subfield is used in a quick report design, the report will list all values of the subfield for each parent record. Subfields cannot be used for sorting.

To Insert a Column

- Select a column.
- Select "*Insert Column*" from the "***Edit***" menu or Hold down the mouse button to display the Quick Report pop-up menu and choose "Insert Column".

4D inserts a blank column to the left of the column selected. Then assign a field to the empty column by dragging a field name to it, or assign a formula to the column.

Deleting Columns

To delete a column using the Quick Report menu bar:

- Select the column to be deleted.
- Select "*Delete Column*" from the "***Edit***" menu. 4D removes the selected column from the quick report form.

To delete a column using the Quick Report pop-up menu:

- Hold down the mouse button on the column header. The Quick Report pop-up menu appears.
- Select "Delete Column" from the pop-up menu.

Replacing Columns

Columns can be replaced in the quick report by dragging another field over it or replacing the field with a formula.

Sizing Columns

The Quick Report editor sizes columns automatically (as reflected in the Automatic Width check box). It sizes each column based on the maximum length of data displayed in the column and any labels typed into the column. The Quick Report editor sizes columns only at the time the report is printed. To view the widths of each column, preview the report to the screen.

Because selecting the Automatic Width check box changes the width of a column based on the maximum width of data in the records being printed, selecting different records can change the size of the columns. Columns can be resized manually after deselecting the Automatic Width check box. When a column is set manually, text in the column wraps within the specified area.

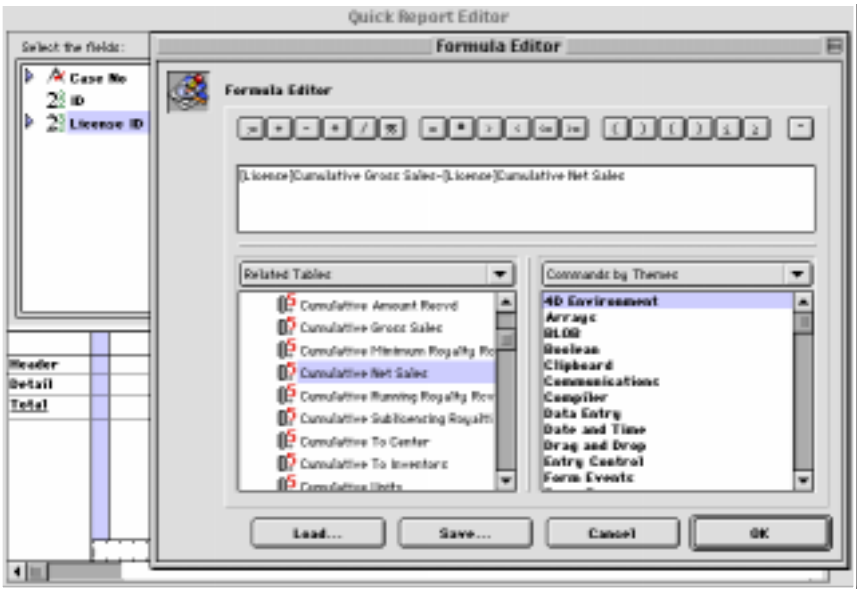
To Manually Resize a Column

- Deselect Automatic Width using either the check box in the Column Properties area or the Quick Report pop-up menu.
- Move the pointer over the right column border in the quick report to change the pointer into a column width cursor .
- Drag the column indicator to the left or right to resize the column.

Adding Formulas to a Quick Report

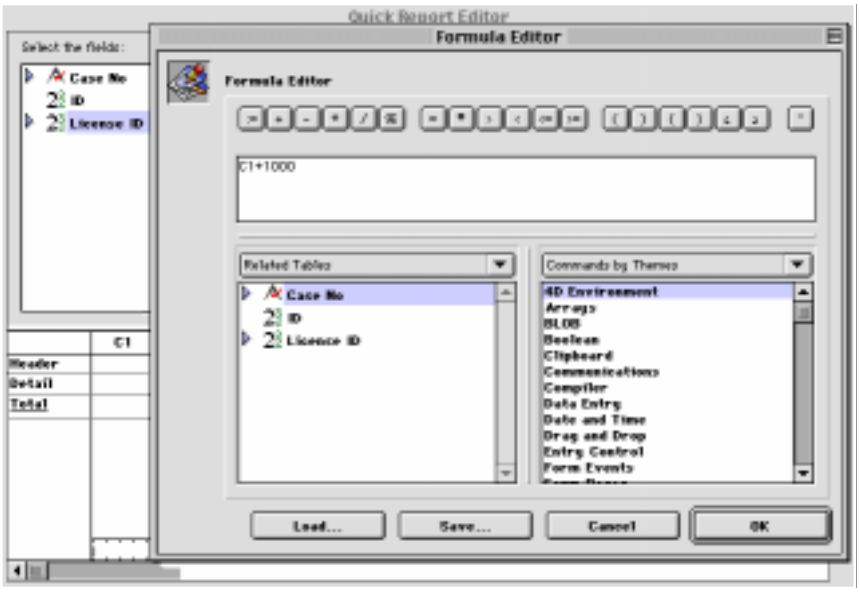
To add a formula:

- Insert an empty column or click an existing column and select "*Edit Column*" from the "***Edit***" menu, or double-click an existing column, or hold down the mouse button on an existing column header to display the Quick Report pop-up menu and select "Edit Column". 4D displays the Formula Editor, in which the formula can be built. Make sure that the formula does not change the current selection. Changing the current selection will cause problems when the quick report is printed since the report is based on the current selection of records.
- Build the formula or click the **Load** button to retrieve an existing formula from disk.
- Click **OK** to assign the formula to the column.



4D adds a new label to the column that identifies it as a formula. Re-label the column by typing a label into the header cell for that column. Formulas are labeled C1 through Cn. The labels are the names of variables that contain the column's value. These variables can be used in other formulas. Click the Cancel button to close the Formula Editor and return to the Quick Report Editor without adding the formula.

Pictured below, the formula entered into the first column can be used in a second formula column.



Sorting Records and Creating Breaks

Other than the traditional desire to view records in a particular order, sorts can be used to create groups of records and Break areas in the report for the purpose of reporting summary calculations for groups.

Specifying a Sort Order

Sort on a formula by selecting the column that contains the formula and then clicking the **Sorted** check box or choosing **Sorted** from the **Quick Report** pop-up menu for that column.

To specify the sort order using the Sorted check box:

- Select the column that contains the field or formula to be specified as the first sort level.
- Click the **Sorted** check box. To specify the sort order by dragging:
  Drag a field from the Fields list to the Sort order list. If the field is not already in the quick report, 4D adds it as the last field in the design.

To specify a sort order using the Quick Report pop-up menu.

- Hold down the mouse button on the column header belonging to the column to be sorted. The Quick Report pop-up menu appears.
- Select **Sorted** from the pop-up menu. 4D displays the name of the field in the Sort list. To the right of the name is an arrow, indicating an ascending sort order. By default, all sorts are performed in ascending sort order.
- If necessary, click the sort direction arrow to sort the column in descending order.
- If desired, select additional fields or formula columns and add the Sorted property using either the Sorted check box or pop-up menu command.

When multiple sort levels are specified, 4D sorts the records from the fields in the order that they appear in the list.

To change the level of a Sort field:

- Drag the name of a field or formula up or down within the Sort list to the desired sort level.

Deleting a Field or Formula from the Sort List

- Select the column and deselect the Sorted check box or Hold down the mouse button on the column header to display the Quick Report pop-up menu and deselect the **Sorted** menu command. 4D removes the field or formula in the Sort field list. It does not delete the column itself from the report. When printing the report, 4D will no longer use that field or formula to sort the records.

Setting Break Levels In a Quick Report

Break levels are used to separate records into groups according to values in one or more sort fields. A Break area is printed at each break level. Summary calculations can be printed in the Break area. The summary calculations — sum, average, minimum, maximum, and count are calculated for each group of records. Break levels are determined by the sort levels and Break rows. For example, if the user sorts records by Company Name and creates a Break row, 4D inserts a break between each group of records that have the same company name. After adding a Break row to the quick report, summary calculations can be requested on each break.

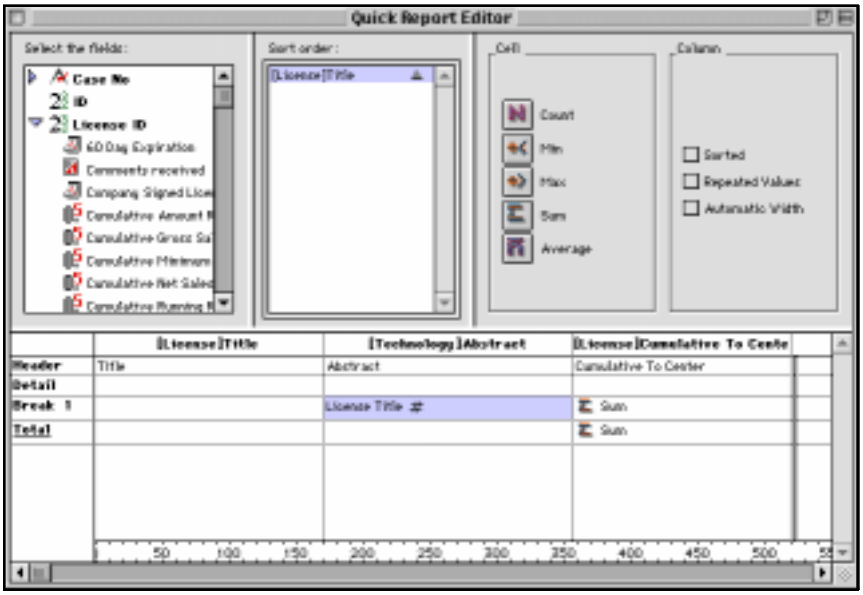
To Insert a Break Row

- Select "*Add Break*" from the "***Edit***" menu or Hold down the mouse button on the Total row label in the Row label bar and choose the "*Duplicate Break*" menu command.
- There should be at least as many sort levels as break levels. 4D adds a sequential number to each new break label in the row label bar, for example, Break1, Break2, Break3, etc.
- After creating a Break row, the Quick Report pop-up menu can be displayed by holding down the mouse button on the new Break row label.

Using the Values of Break Fields in Labels

The appearance and readability of reports can be improved by labeling each Break row using the value of the Break field. To request that the value of a Break field be printed in a label placed in the Break area, use the number sign (#) in the label. For example, the text "#" will insert the title (in this case, the value of the License Title field) in place of the number sign when the report is printed. The number sign does not need to be placed in the same column as the Break field. It will display the value of the Break field in any cell in the Break row.

Depicted below, the License Title will be displayed for each title to the left of the total for that License Title in the "Break 1" row.



Adding Summary Calculations

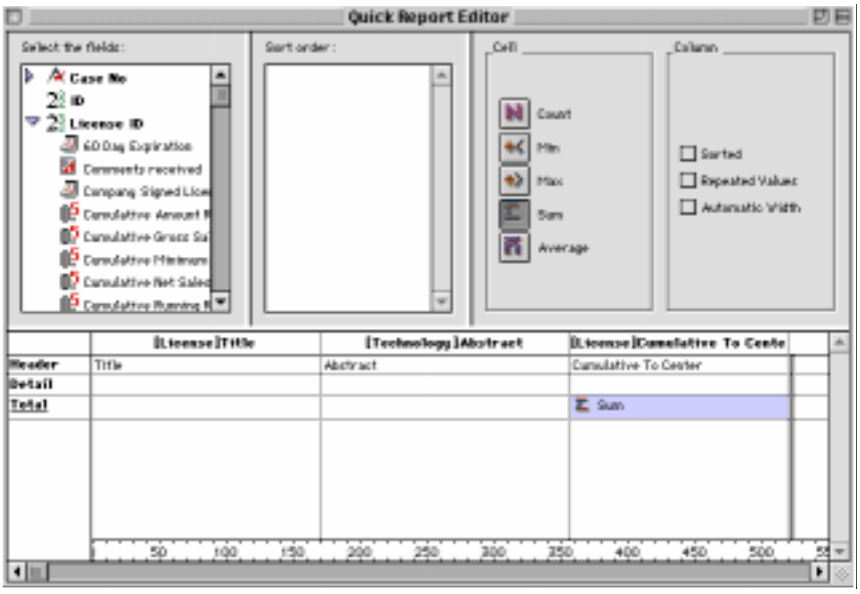
Summary calculations can be added on the contents of fields and formulas to each Break row and to the Totals row. The check boxes in the Cell area of the Quick Report editor identify the summary calculation options available for quick reports. The following types of summary calculations are available.

- Sum totals the values in the report or break.
- Minimum displays the lowest value in the report or break.
- Maximum displays the highest value in the report or break.
- Average calculates the average of the values in the report or break.
- Count calculates the number of records in the report or break.

These options also appear in the Quick Report pop-up menu for cells in the Break and Total rows.

When a summary calculation is placed in the Totals row, the calculation is done for all records in the report. If it is placed in a Break row, the calculation is done for the records in the break.

To add a summary calculation, select the relevant cell and click as many calculation check boxes as needed. If more than one summary calculation is added to a cell, 4D stacks the calculation icons on top of each other.



Printing Repeated Values for Break Columns

In a report with breaks, the columns which are used to group records so that summary calculations can be done are called Break columns. In some cases, the user can repeat the values for the Break columns so that they appear for every record in the Break area. This is done by selecting the Repeated Values column property. The user can do so either by clicking the **Repeated Values** check box in the Column Properties area or by selecting the "*Repeated Values*" menu command in the Quick Reports pop-up menu for that column.

Setting Display Formats

Display formats can be specified for columns that contain numeric or alphanumeric (Alpha) data. If the report includes Alpha fields such as a telephone number or Social Security number, an Alpha format can be used.

Numeric Formats

The following format places a dollar sign to the left of the number and allows up to 7 digits:

$#,###,###

This format can display dollar amounts up to $9,999,999.

Alpha Formats

An Alpha format can be used for fields that contain string information. For example, the following format would be used to format Social Security numbers:

###-##-####

Boolean or Logical Formats

There is not a display format for Boolean or Logical type data. 4D will print this data as "True" or "False". By inserting the following code into the formula editor, the Quick Report will print "Yes" for true and "No" for false. Any two options for any Boolean or Logical field in NASA TechTracS can be substituted here.

```
(“YES”*Num([License]Comments received))+(“NO”*Num(Not([License]Comments
received)))
```

Another variation might be:

```
(“Send to HQ”*Num([License]Send to HQ))+(“Do Not Send”*Num(Not([License]Send
to HQ)))
```

Entering the Display Format for a Field

Enter a display format or custom format by choosing it from the Quick Report pop-up menu for the cell or by typing it into a cell.

To enter a display format for a numeric or Alpha field:

- Click twice in the Detail cell for a numeric or Alpha column.
- Type a display format or the name of a style to be used as the display format.

The names of styles are preceded by a vertical bar (|).

To choose a display format from the Quick Report pop-up menu:

- Position the pointer over the Detail cell for a column and hold down the mouse button and choose a display format from the hierarchical menu.

The hierarchical menu will show display formats that are appropriate for the data type of the column. For example, if the field was a numeric format, the menu command would be "*Numeric*" instead of "*Alpha*" and the submenu would list only numeric formats. For example, the format named "|Dollars" in NASA TechTracS will display numeric data as currency.

If requesting summary calculations for that column, the format specified in the Detail cell will automatically be applied to the summary calculations. Regardless of the display format, the count is always displayed as an integer without formatting symbols such as the dollar sign. Different formats can be applied to different columns in the report.

Hiding and Showing Rows and Columns

Hiding rows is useful when the report is to include only summary calculations. This feature can hide a Detail row, a Break row, or the Totals row. The user can hide a column if they need to use the column as a sort column, but do not want the report to display the column. Rows can be hidden using either a Quick Report menu command or the Quick Reports pop-up menu.

To Hide a Row Using the Menu Command

- Select the row to be hidden.
- Select "*Hide*" from the "***Edit***" menu.

To Hide a Row Using the Pop-up Menu

- Hold down the mouse button over the row label in the Row label bar.
- Select **Hide** from the pop-up menu. 4D displays the row in gray to inticate that the row will not appear when the report is printed or previewed.

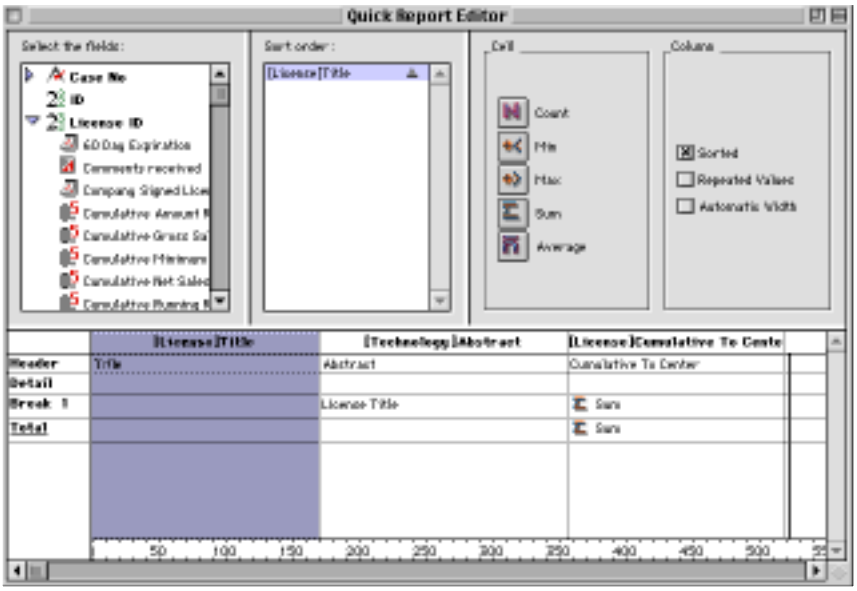
To Hide a Column Using the Menu Command

- Select the column to be hidden.
- Select "*Hide*" from the "***Edit***" menu.

To Hide a Column Using the Quick Reports Pop-up Menu

- Hold down the mouse button over the column header.
- Select **Hide** from the pop-up menu.

Pictured below, the column is displayed in gray to indicate that it will not appear in the printed report.

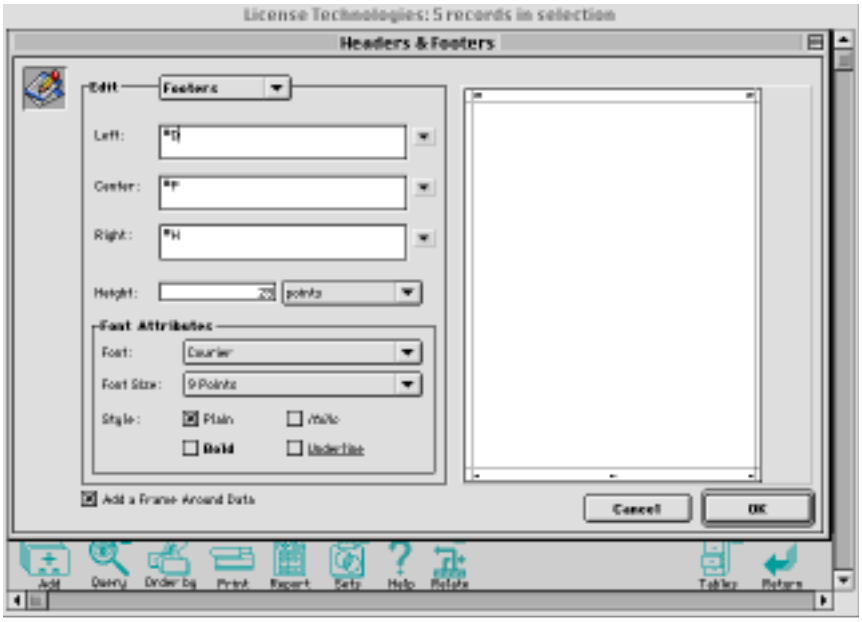


When a row or column is hidden, the "*Hide*" menu command in the **Edit** and **Quick Report** pop-up menus becomes "*Show*". Selecting "Show" will allow the row or column to reappear.

To Add Page Headers and Footers

- Select "*Headers and Footers*" from the "***File***" menu. The Header and Footers dialog box specifies both headers and footers from the same screen. The Edit drop-down list is used to specify either the header or footer.
- Select "*Header*" or "*Footer*" from the "***Edit***" drop down list.

- Enter the header or footer height in the height area. Upon initial entry of the dialog box, the header and footer heights are set to 25 points each. The values for the height can be changed and the measurement scale can be set to inches or centimeters. As the header and footer height is entered, the dotted lines on the page preview area change to indicate the size of the header and footer as they will appear on the printed report.
- Select an entry area and type the header or footer text. To the right of each entry area is a pop-up menu that allows the user to insert variables into the entry area. The current page number (#P), time of printing (#H), or date of printing (#D) can be inserted from the pop-up or by simply typing in the code.



Choose a font and font size from the drop-down lists and click one or more Style check boxes. The specifications are applied to all three entry areas. It is not possible to apply different font attributes to different areas of the header or footer, although it is possible to have different attributes for the header and the footer.

Printing a Quick Report

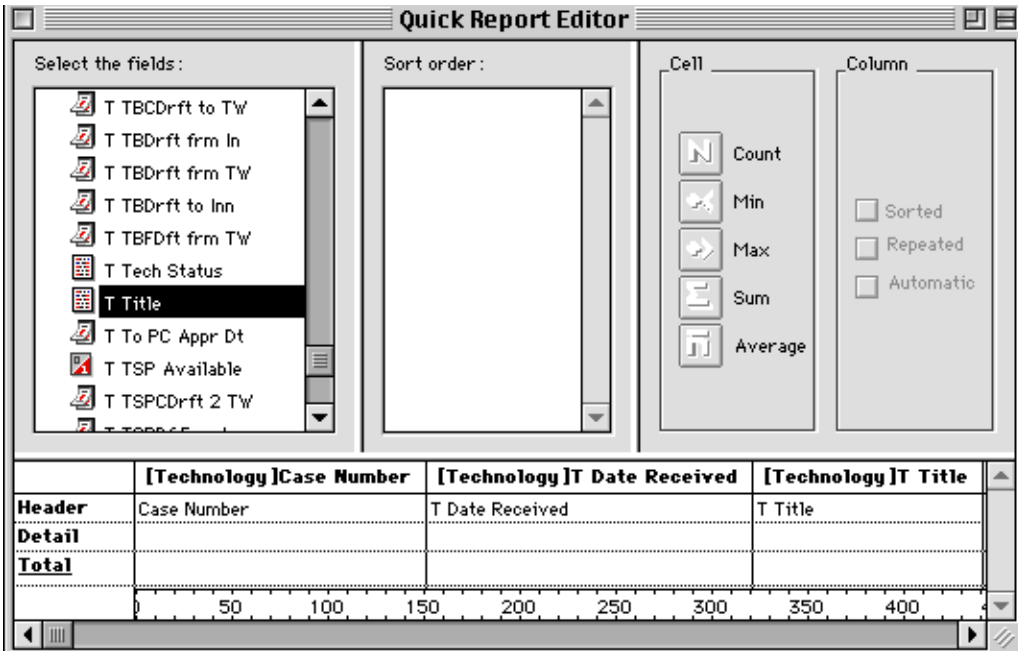
After completing the report design, the quick report can be printed to a standard printer selected in the Print Manager (the Chooser on Macintosh), to disk, or to a graph. To select an output device choose "***Print Destination***" from the "***File***" menu. If printing to a printer, the report can be previewedbefore printing it.

Quick Reports do not query the database. There must be at least one record in view at the time of the report. Refer to the Query Editor documentation for more information on queries.

Tutorials

Tutorial #1 - Simple Quick Report

Simple reports can quickly be created using the Quick Report Editor. Using a previously saved query in the **Technology** table, create a quick report that includes the **[Technology]Case Number**, **[Technology]T Date Received**, and **[Technology]T Title**.



1. Select **[Technology]** table from the Data Control Panel and click **OK**.

2. Select **Query Editor** from the pop-up query icon (magnifying glass symbol) on the bottom of the screen.

3. Click the **Load...** button to open previously saved query "**TechQuery1.4qf**" and click on **Query** button.

4. Select "*Quick Report...*" item from the "***Report***" menu.

5. Drag/drop **[Technology]Case Number** field to report template.

6. Drag/drop **[Technology]T Date Received** to the right of **[Technology]Case Number**.

7. Double-click **[Technology]T Title.**

8. Select "*Save*" item from the "***File***" menu and type "`TechReport1.4qr`" for the filename.

9. Select "*Print Preview...*" from the "***File***" menu.

10. Click the **Zoom** button icon (magnifying glass symbol) to zoom into report.

11. Click the **Zoom** button to return to normal viewing mode.

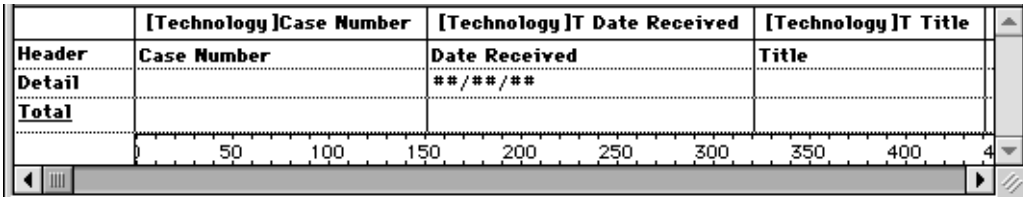
12. Click the **Next/Previous Page** buttons (arrows) to preview next/previous pages.

13. Click the **Print Page** button (printer symbol) to print current page.

14. Click the **Stop** button (stop sign symbol) to return to quick report.

Topics Covered: **Next Page, Previous Page, Print Page, Print Preview, Save, Stop, Zoom**

Tutorial #2 - Formatting the Quick Report



1. Click the word **Header** to highlight the header area.

2. Select "*Bold*" item from the "***Style***" menu.

3. Double-click in the cell where the **Header** row and **T Date Received** intersect. Remove the "`T <space>`" so that only "`Date Received`" remains.

4. Double-click in the cell where the **Header** row and **T Title** intersect. Remove the `T<space>` so that only `Title` remains.

5. In the detail area of the **[Technology]T Date Received** column type "`##/##/##`". This will force the date to appear with leading zeros (ie. "05/01/98" instead of "5/1/98").

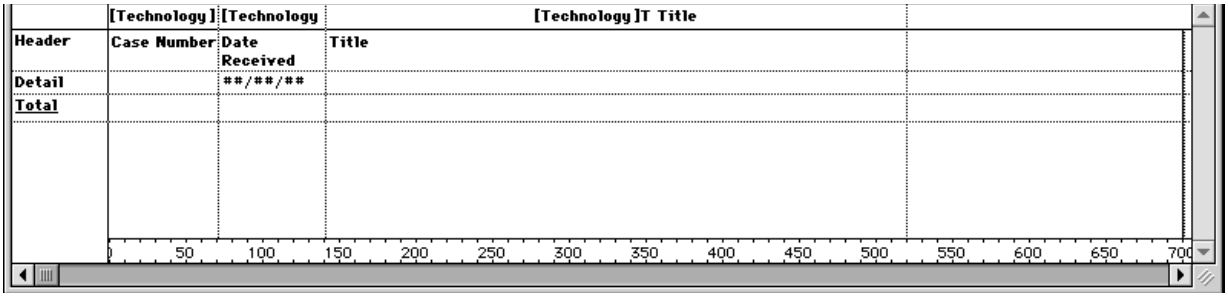
6. Select "*Save*" item from the "***File***" menu.

7. Select "*Print Preview...*" item from the "***File***" menu.

Topics Covered: **Formatting Report**

Tutorial #3 - Automatic Width

Automatic width is automatically checked for every data field that is added to a quick report. When there are few records and the report is simple, automatic columns width works well. However, automatic calculation can take several minutes when there are a large number of records and the results of the automatic columns might not be what is needed. Therefore, it is recommend that automatic width be unchecked and each column manually adjusted.



Note: You can share 4D Quick Report files with other NASA TechTracS users. To share a 4D Write file created on a Mac to a PC user, the filename must have the extension ".4qr" (ie my4Doc.4qr). Hence, email the report as an enclosure to share to other users.

1. Click the **[Technology]Case Number** column.and uncheck the **Automatic Width** check box.

2. Resize the column width for the **[Technology]Case Number** by positioning the cursor on the right-hand side of the column.Click and drag the right-hand side of the column to position 70 (approx. 1 inch) on the ruler.

3. Resize **[Technology]T Date Received** column from position 70 points (approx. 1 inch) to position 140 points (approx. 2 inches) on the ruler.

4. Resize **[Technology]T Title** column from position 140 points to the right edge of the paper which is indicated by a vertical line. (Approximately 520 points)

5. Select "*Page Setup...*" item from the "***File***" menu. Choose landscape. Click **OK**.

6. Notice that the right edge of the paper has moved to the right at approximately 700 points (approx 7-1/4 inches).

7. Select "*Print Preview...*" item from the "***File***" menu.

8. Click the **Stop** button.

9. Select "*Save*" item from the "***File***" menu.

Topics Covered: **Automatic Width, Page Setup**

Tutorial #4 - Headers/Footers

The following special codes can be used in the header and footer:

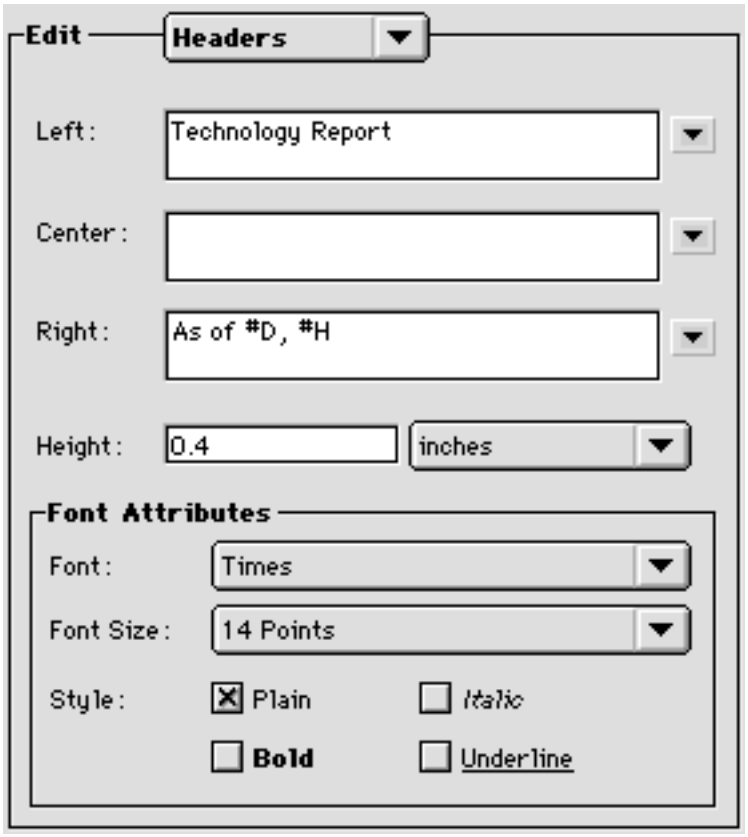
#D = Current Date

#H = Current Time

#P = Page Number

The codes can be typed in or chosen from the triangle pop-up located next to each header/footer area (ie left, center, right).

1. Select "*Headers & Footers...*" item from the "***File***" menu.

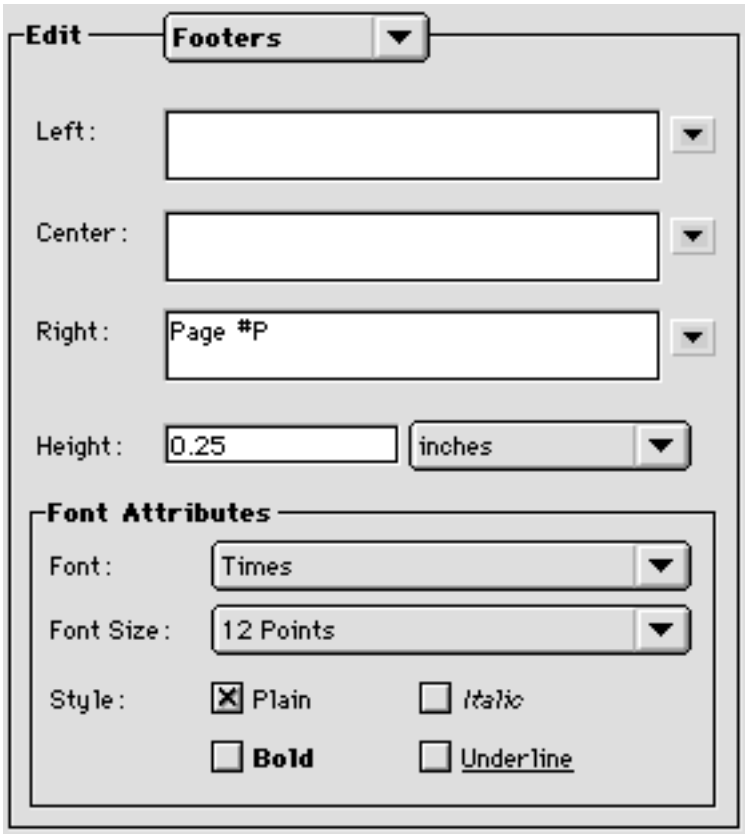


2. Type "`Technology Report`" in the left header area.

3. Type "`As of #D, #H`" in the right header area.

4. Select **inches** from the **Height** pop-up.

5. Type `".4"` as the header height.
6. Select **Times** from the **Font** pop-up.
7. Select **14 Point** from the **Font** pop-up.
8. Select **Footer** from the **Edit** pop-up.
9. Type "Page #P" in the right footer.
10. Select **inches** from the **Height** pop-up.
11. Type `".25"` as the footer height.
12. Select **Times** from the **Font** pop-up.
13. Select **12 Point** from the **Font** pop-up.



14. Click the **OK** button.
15. Select ***"Print Preview..."*** item from the ***"File"*** menu.

16. Click the **Stop** button.

17. Select ***"Headers & Footers..."*** item from the ***"File"*** menu.

18. Uncheck **Add a Frame Around Data.** Click the **OK** button.
    Note that the ruler has changed to inches instead of points.

19. Select ***"Print Preview..."*** item from the ***"File"*** menu.

20. Click the **Stop** button.

21. Select ***"Headers & Footers..."*** item from the ***"File"*** menu.

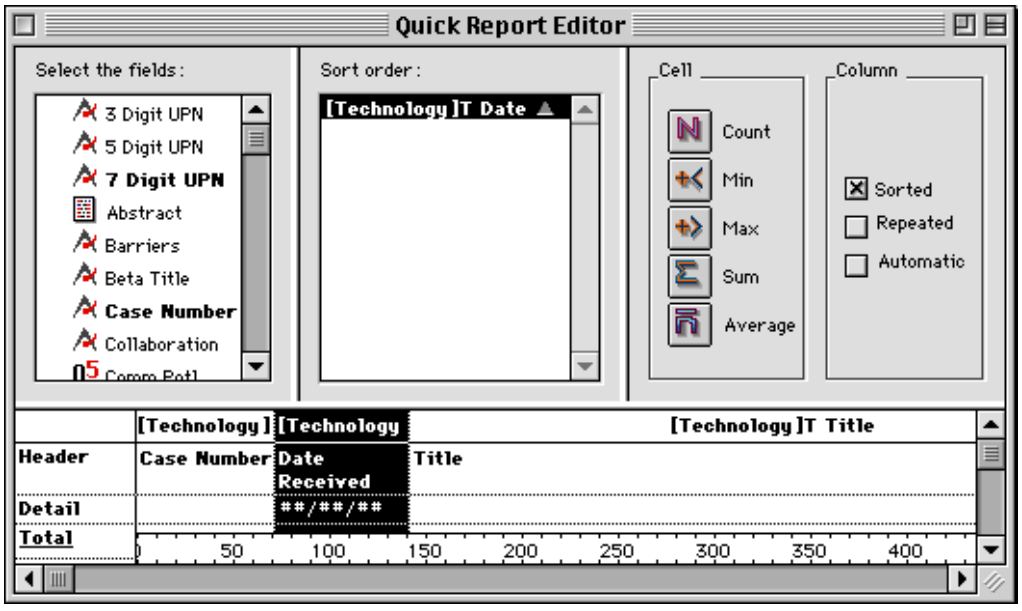
22. Check **Add a Frame Around Data.** Click the **OK** button.

23. Select "*Save*" item from the "***File***" menu.

Tutorial #5 - Sorting

1. Click the **[Technology]T Date Received** column.

2. Check the **Sorted** check box.



3. Select "*Print Preview...*" item from the "***File***" menu.

   If dates appear to be missing from the report it is because the sort function does not display repeated values by default.

4. Click the **Stop** button.

5. Click the **[Technology]T Date Received** column.

6. Check the **Repeated Values** check box.

7. Select "*Print Preview...*" item from the "***File***" menu.

8. Click the **Stop** button.

9. Click once on triangle to the right of **[Technology]T Date Received** in the **Sort order:** list to reverse the sort.

10. Select "*Print Preview...*" item from the "***File***" menu.

11. Click the **Stop** button.

12. Select "*Save As*" item from the "***File***" menu and type "`TechReport2.4qr`" as the filename.

Topics Covered: **Sort, Repeated Values**

Tutorial #6 - Calculations

1. Drag/drop the **[Technology]P TSP Total** field to the right of the **[Technology]Title** field.

2. Uncheck the **Automatic Width**. Resize the column to about 1 inch or 70 points wide.

3. Double-click in the cell where the **Header** row and "**P TSP Total**" intersect. Remove the "P " so that only "TSP Total" remains.

4. Select the text "TSP Total" and select "*Bold*" item from the "***Style***" menu.

5. Click where the **Total** and **[Technology]P TSP Total** intersect**.**

6. Click on the following calculation buttons in the Cell area of the screen.

   Count
   Min
   Max
   Sum
   Average

7. Click twice in the cell to the left of the calculations and type the following:

   Sum
   Average
   Min
   Max
   Count

8. Select the text just entered. Select "*Right*" item from the "***Style***" menu.

9. Highlight the **Total** row by clicking on the word **Total**.

10. Select "*Bold*" item from the "***Style***" menu.

[Technology]T Title	[Technology
Title	**TSP Total**
Sum **Average** **Min** **Max** **Count**	Sum Average Min Max Count

11. Select "*Print Preview...*" item from the "***File***" menu.

12. Click on the **Next Page** button until you reach the end of the report.

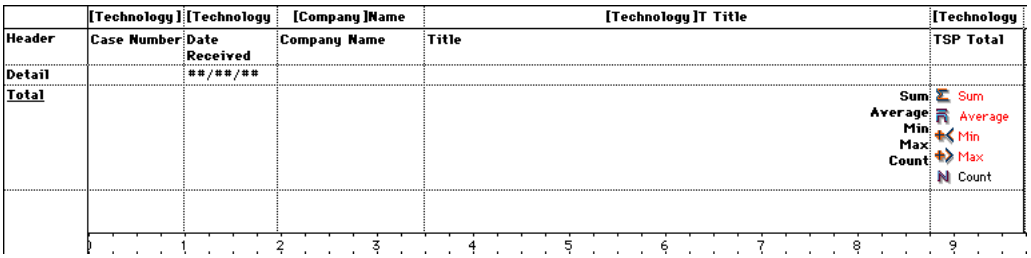
13. Click the **Stop** button.

14. Select "*Save*" item from the "***File***" menu.

Topics Covered: **Average, Count, Max, Min, Sum**

Tutorial #7 - Related Fields

1. Click on the **[Technology]T Title** column.
2. Select "*Insert Column*" item from the "***Edit***" menu.
3. Locate the **[Technology]Contract Number** field.
4. Turn down the triangle next to the **[Technology]Contract Number** field.
5. Locate the **[Contract_Grant]Company Code** field.
6. Turn down the triangle next to the **[Company]Company Code** field.
7. Double-click on the **[Company]Name** field.
8. Click **OK**.
9. Uncheck **Automatic Width**.
10. Resize the **[Company]Name** column to 1-1/2 inches or 110 points wide.
11. Click twice in the header cell for **[Company]Name** column and type "`Company Name`" as the header for the **[Company]Name** column.
12. Select the text "Company Name" and select "*Bold*" item from the "***Style***" menu.



13. Select "*Print Preview...*" item from the "***File***" menu.
14. Click the **Stop** button.
15. Select "*Save*" item from the "***File***" menu.

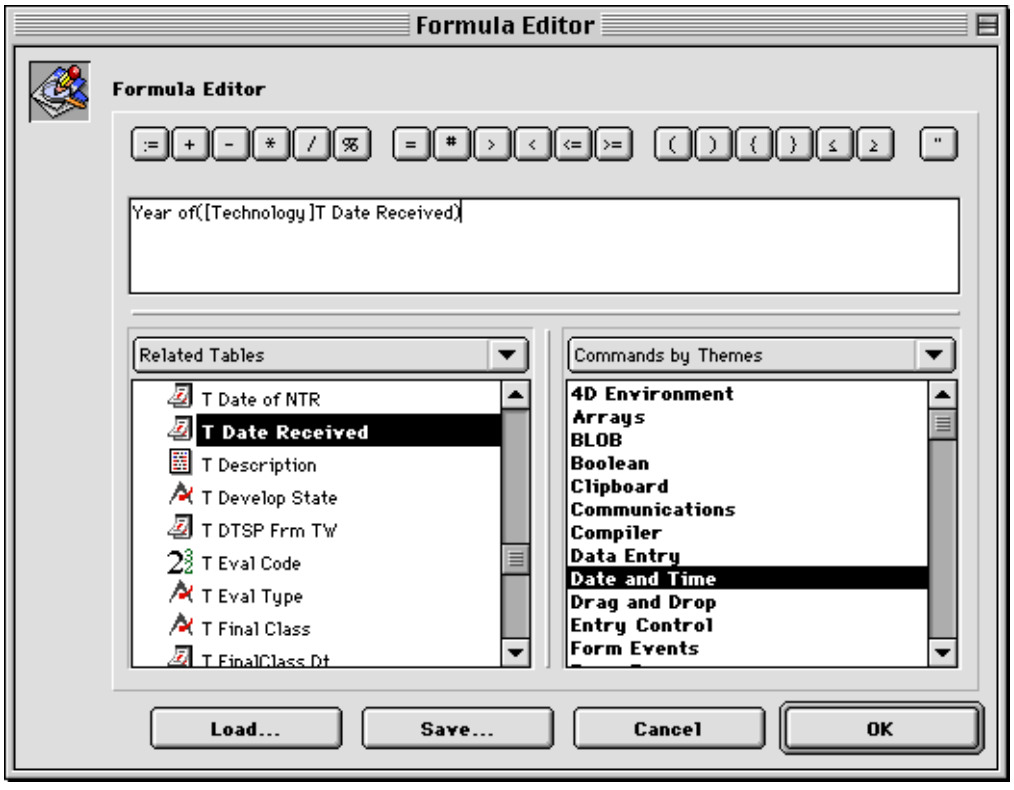
Topics Covered: **Insert Column, Related Fields**

Tutorial #8 - Built-In 4D Expressions

There are over a hundred built-in expressions that are available for use in the quick report editor. (See the 4D Language Reference for a complete listing)

1. Click on the [**Technology]T Date Received** column.
2. Select "*Delete Column*" item from the "***Edit***" menu.
3. Click on the **[Technology]Case Number** column.
4. Select "*Insert Column*" item from the "***Edit***" menu.

   Notice the column is labeled C1.
5. Locate **Date and Time** in the **Commands by Theme** section and click and hold to display pop-up. Select **Year of**.
6. Type "(".
7. Double-click on **[Technology]T Date Received**.
8. Type ")".



9. Click **OK** button.

10. Uncheck **Automatic Width**. Check **Sorted**. Check **Repeated Values**.

11. Type "`Year`" in the header for C1.

12. Select "*Left*" item from the "***Style***" menu.

13. Select "*Print Preview...*" item from the "***File***" menu.

14. Click the **Stop** button.

15. Select "*Save as*" item from the "***File***" menu and type "`TechReport3.4qr`" as the filename.

Topics Covered: **Built-in 4D Expressions, Delete Column, Insert Column, Related Fields**

Tutorial #9 - Adding a Break

1. Select "*Add Break*" item from the "***Edit***" menu.

2. Click where the **Break 1** and **[Technology]P TSP Total** intersect**.**

3. Click on the following calculation buttons in the Cell area of the screen.

   Count
   Min
   Max
   Sum
   Average

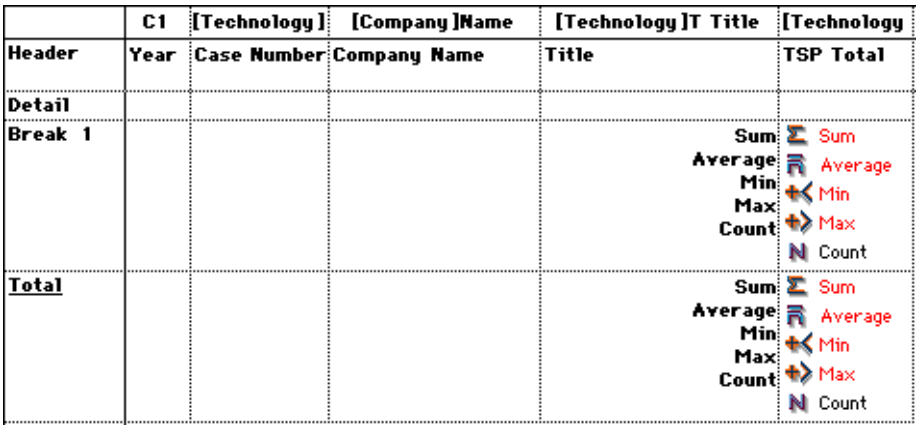
4. In the cell to the left of the calculations, type the following:

   Sum
   Average
   Min
   Max
   Count

5. Select the text just entered. Select "*Right*" item from the "***Style***" menu.

6. Highlight the **Total** row by clicking on the word **Total**.

7. Select "*Bold*" item from the "***Style***" menu.



	C1	[Technology]	[Company]Name	[Technology]T Title	[Technology
Header	Year	Case Number	Company Name	Title	TSP Total
Detail					
Break 1				Sum Average Min Max Count	Sum Average Min Max Count
Total				Sum Average Min Max Count	Sum Average Min Max Count

8. Select "*Print Preview...*" item from the "***File***" menu.

9. Click the **Next Page** button until you reach the end of the report.

10. Click the **Stop** button.

11. Select "*Save*" item from the "***File***" menu.

12. Close the Quick Report window.

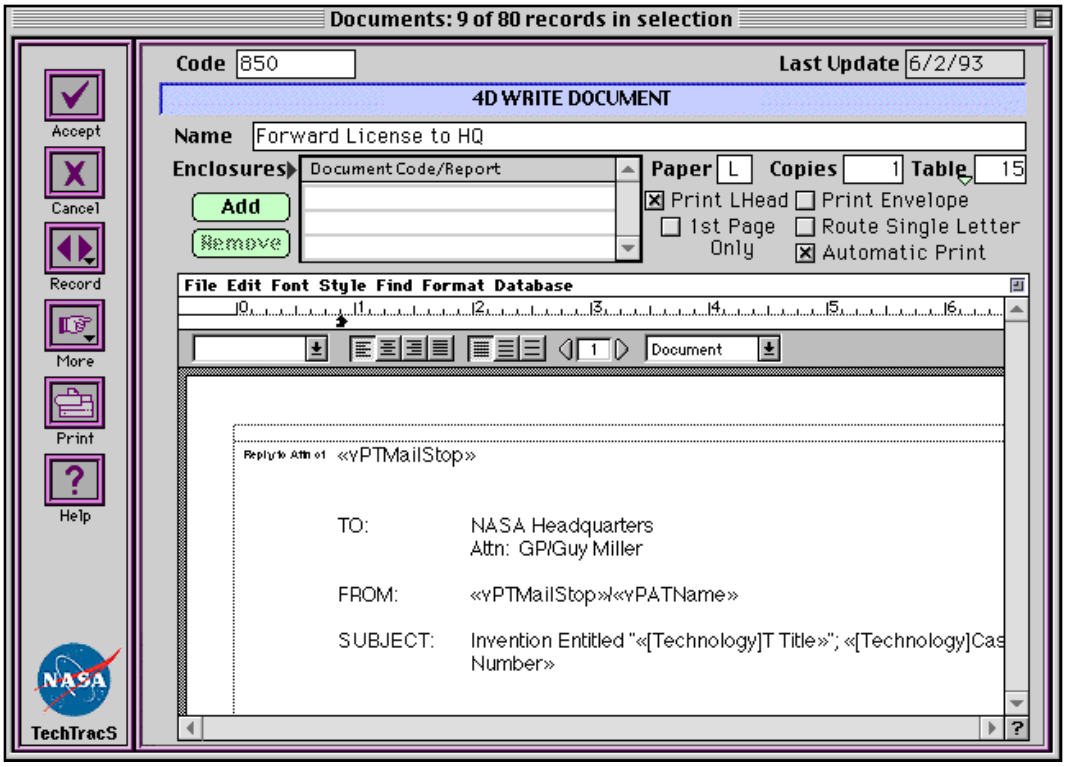
Topics Covered: **Add Break**

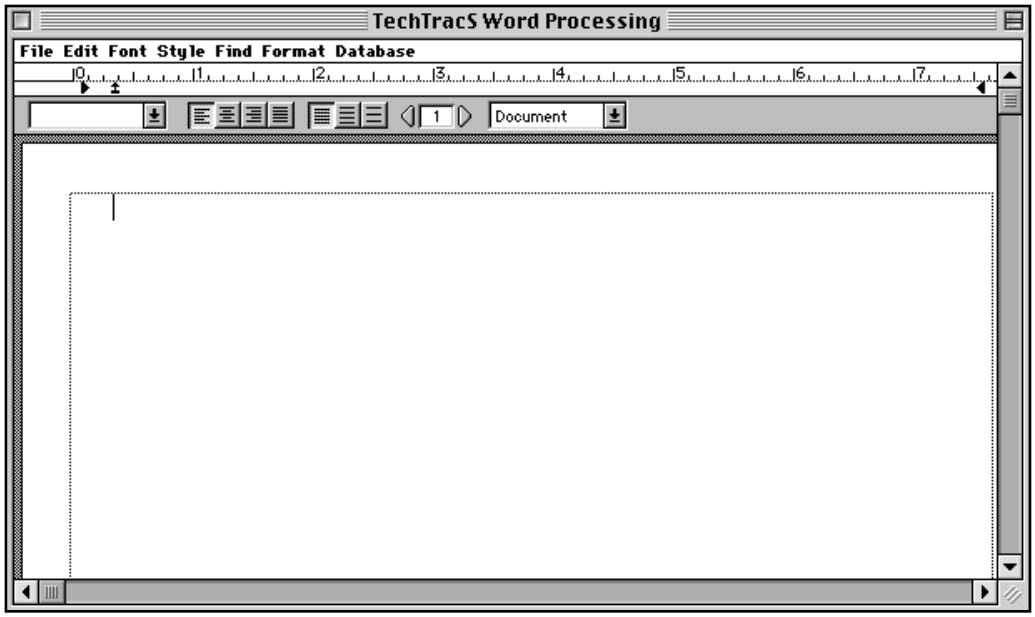
4D Write

Margins
Tabs
Paragraphs
Page Breaks
Headers and Footers
Inserting Data
Inserting Expressions
Formatting Expressions or fields
Pictures
Mac OS and Windows Operating Systems Shortcuts
Tutorials

Overview

4D Write is more than just a word processor, because it is integrated with the 4D database. Documents created with 4D Write can be saved with a database record or on a user's disk. 4D Write documents can utilize information from the database record in the form of fields, functions from the database code or variables from the 4D environment. A 4D Write area may appear on a database entry form or in its own window where it behaves like a stand-alone application.

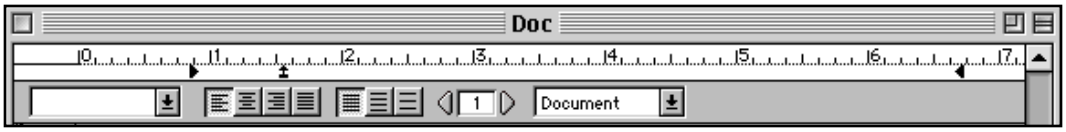




Menus are available in the 4D Write area when operating in an entry form and from the main menu when operating in a 4D Write window.

Margins

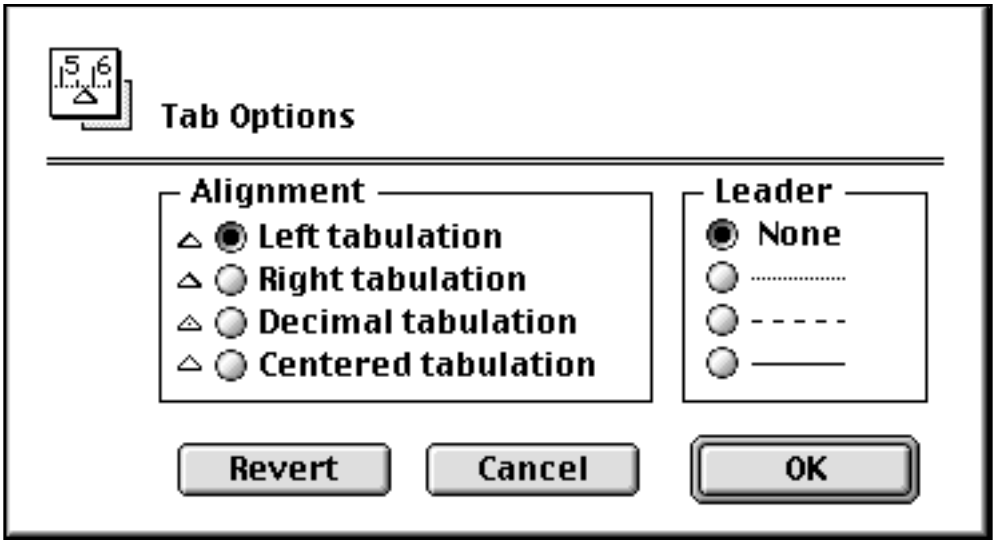
At the top of a 4D Write document is a ruler indicating the width of the area in which a user can type. This margin can be changed by the user to accommodate more or less text per line. Simply dragging the small triangles at either end changes the margins.



The margins allow typing line after line without pressing the `return` key. Pressing `return` creates a new paragraph.

Tabs

4D Write sets default tab stops at half inch intervals, but the user may change this for any paragraph independently by clicking just below the ruler at the desired location of the tab to create. Double-clicking the tab stop marker on the ruler displays specification options for the tab. The options are **alignment** and **leader** where alignment is left, right, decimal, or centered, and leader is none or varying dash combinations.



To remove the tab stop, drag it off the ruler.

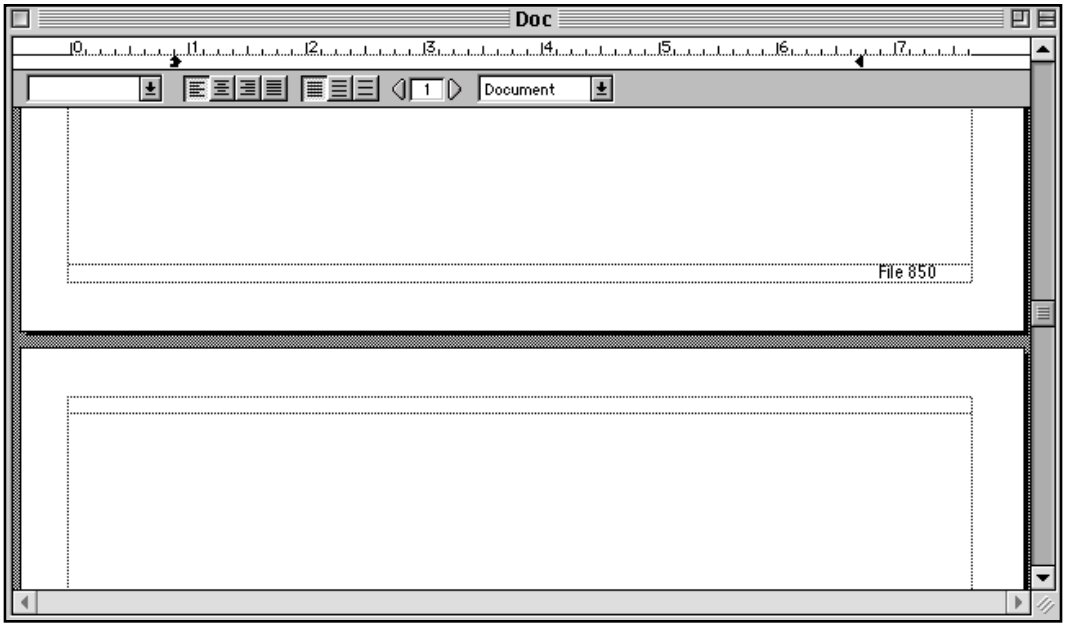
Paragraphs

Also on the ruler is a first line indent marker that appears as a small up-arrow character with an underline attached to it's base. This character can be dragged into position to indicate where each new paragraph begins.

Below the ruler is a format bar for specifying line spacing and alignment

Page Breaks

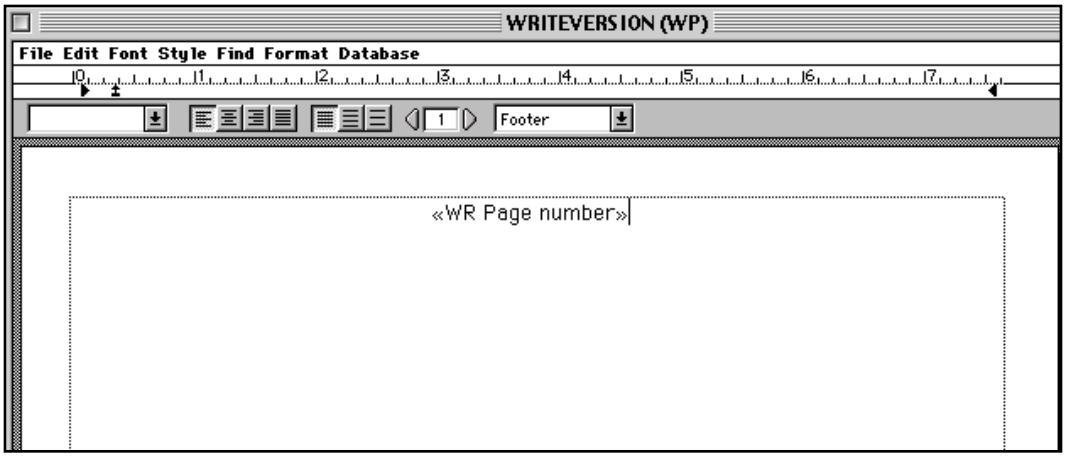
Page breaks may be inserted by selecting "*Insert Page Break*" from the "***Format***" menu.



Headers and Footers

A Header and Footer may be specified for the document by selecting "*View Header*" and "*View Footer*" from the "***Format***" menu. This information will be present on every page of the document. By selecting "*View Footer*" from the "***Format***" menu, page number references can be inserted for printing on every page.

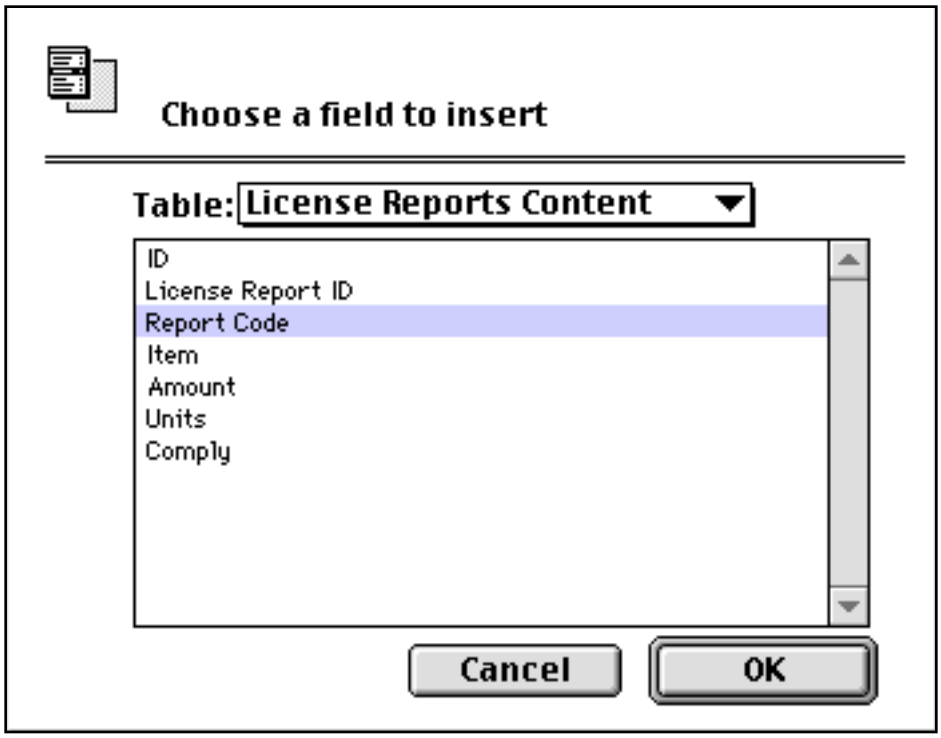
Select "*Insert Page Number*" from the "***Database***" menu:



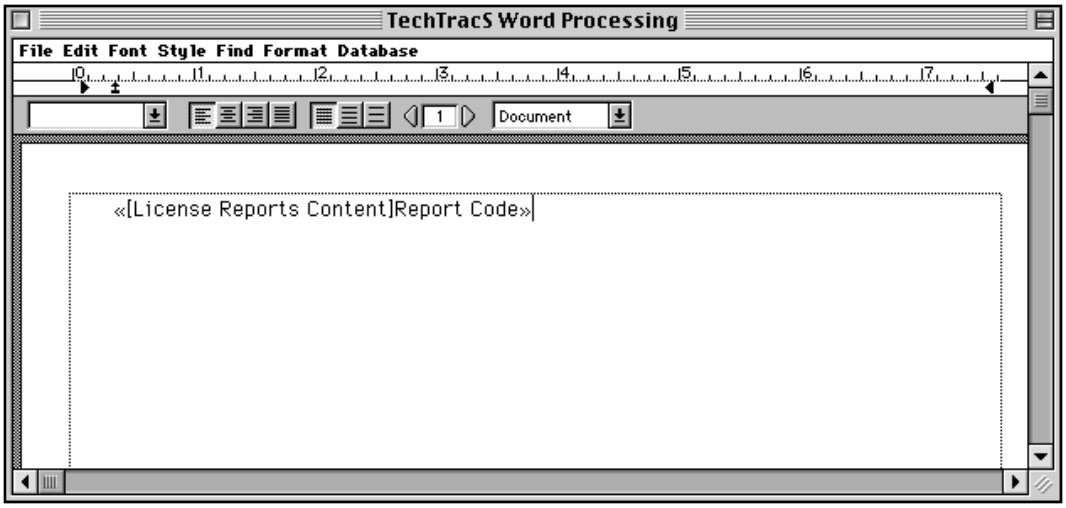
Inserting Data

Fields and expressions may be inserted into a 4D Write document as references or as values frozen at the time the document is created. To insert a field, either select "*Insert Field*" from the "***Database***" menu or press to display a pop-up menu of fields. To show the fields as values in order to view their contents, select "*Show Values*" from the "***Database***" menu. To again see the fields as references, select "*Show References*" from the "***Database***" menu. As references, the fields will be enclosed by these two symbols, « ». As references or values this data is dynamic and will vary upon the current record of the database for which the document is printed. To make the document static and forever unchanged by the database, select "*Freeze Document*" from the "***Database***" menu. This operation cannot be undone. To freeze just a portion of the document, highlight the relevant text and select "*Freeze Selection*" from the "***Database***" menu. Freeze Selection can only be undone by deleting the selected text.

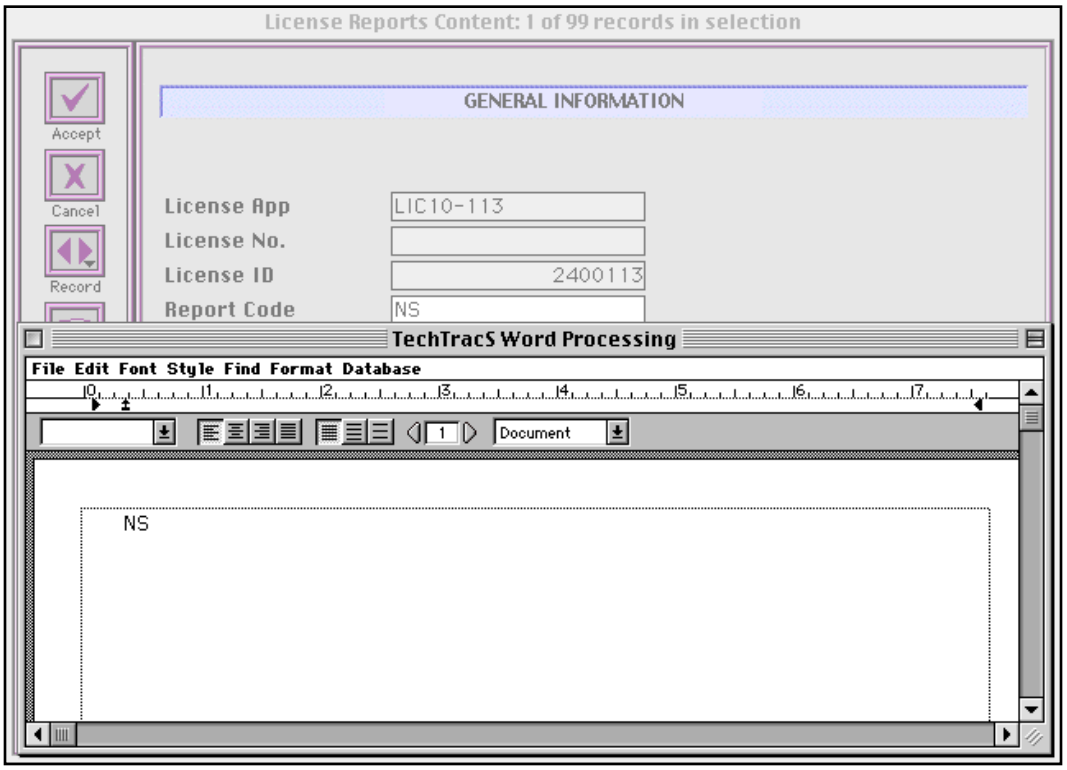
Choose Field



Show References



Show Values

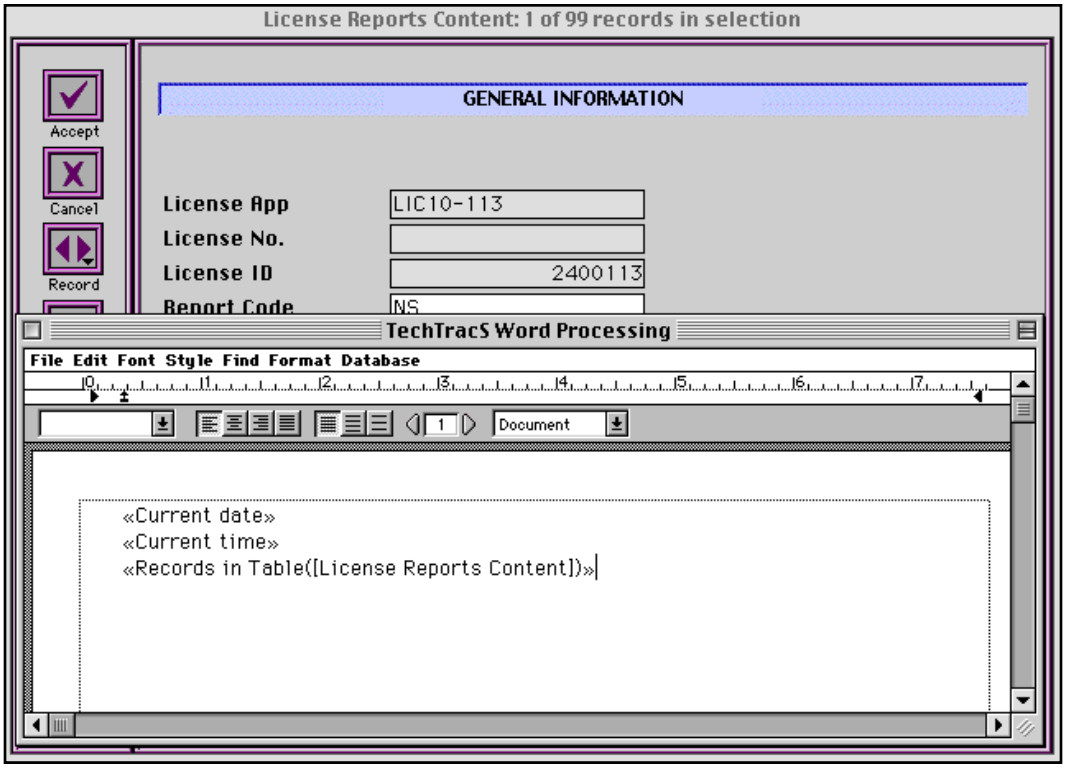


Inserting Expressions

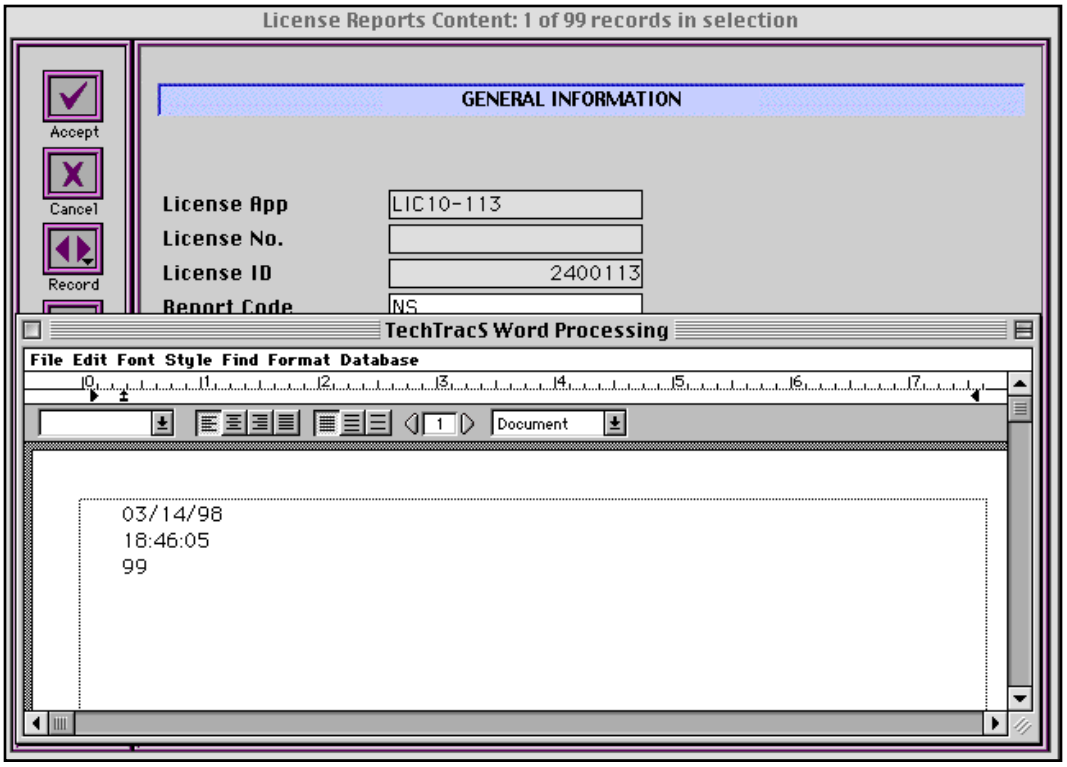
In addition to fields, expressions can also be inserted into a 4D Write document. From the "***Database***" menu, select "*Insert Current Date*", "*Insert Current Time*", and "*Insert 4D Expression*" options. Pictured below are implementations of the aforementioned menu options and the results when selecting "*Show Values*" from the "***Database***" menu.

Date, Time, and 4D Code

Date-Time-Code as Refs

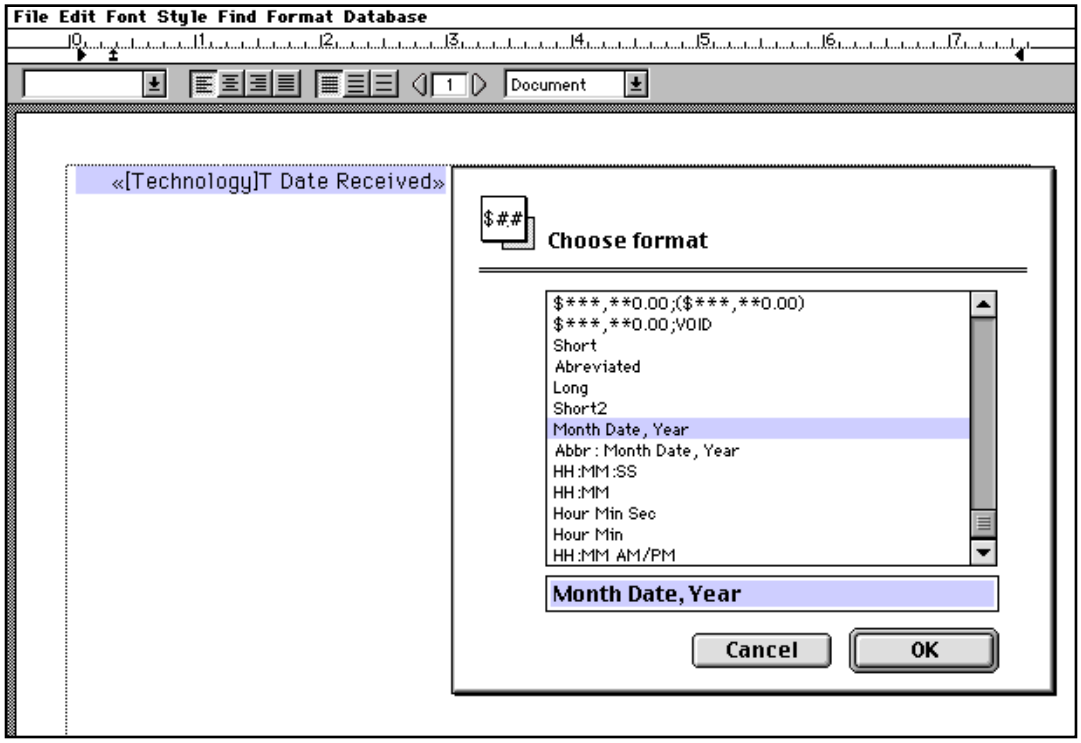


Date-Time-Code Values

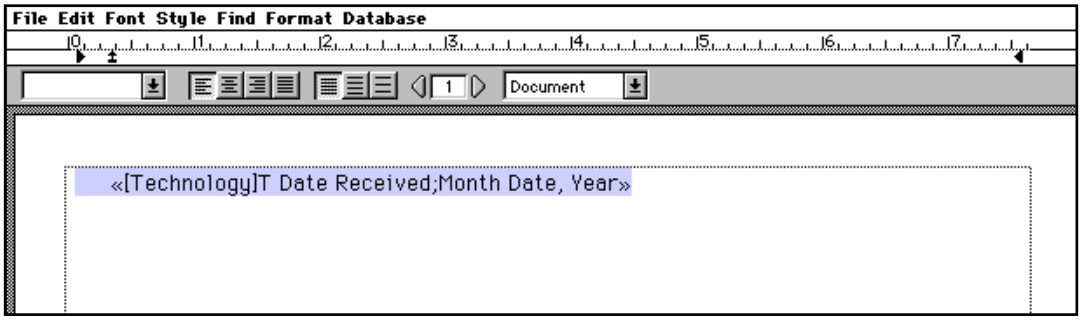


Formatting Expressions or Fields

By clicking on an expression or a field and then selecting "*Format*" from the "***Database***" menu, a format can be selected from the list of standard NASA TechTracS formats.



After selecting the format, the field will be displayed in the document followed by a semicolon and the name of the format.



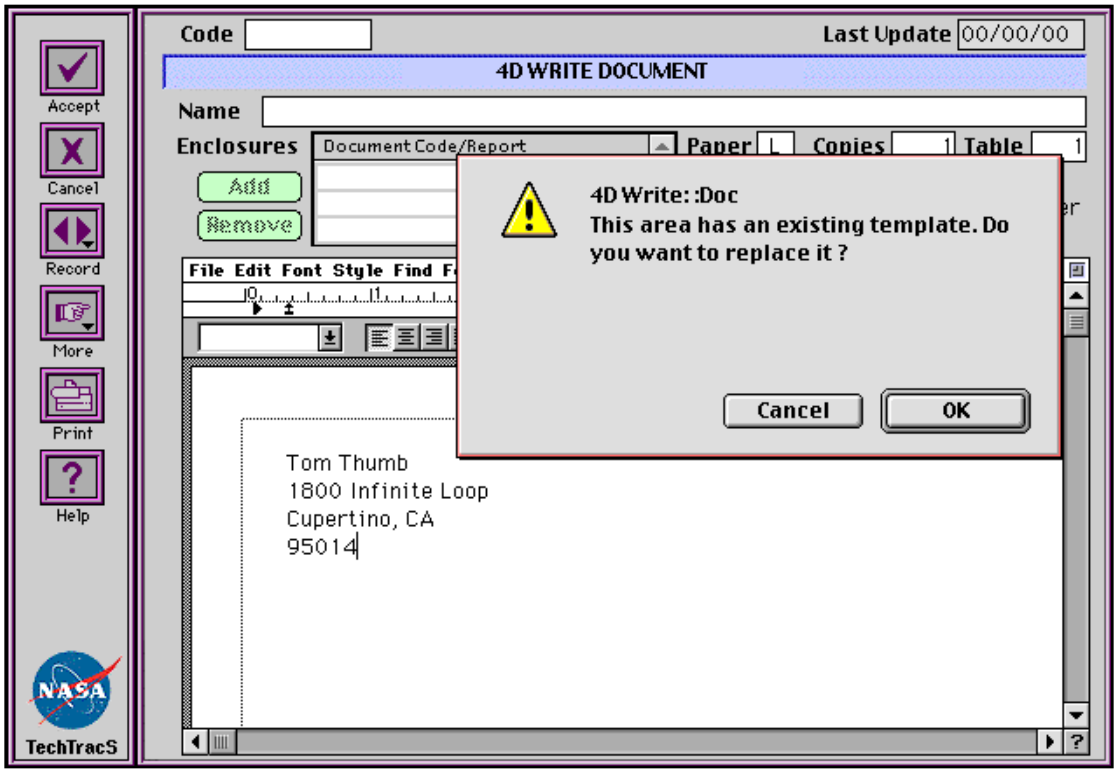
Templates

Selecting the "*Save As Template*" from the "***File***" menu will save all of the information in the current document to be reused for every new instance of the document. Selecting "*New*" from the "***File***" menu will allow the replacement of the template information in a given document. In a non-standard document, spaces are used for formatting. Sections of the template can be deleted where necessary for any given document.

The template option is not available in a 4D Write External window such as the NASA TechTracS Word Processing module. This is because the template is stored with the input form where it resides. For example, the [Documents] table in NASA TechTracS has a 4D Write area on it's input form.

In the [Documents] table, every new record comes with the same template information loaded into it. The user can then decide which parts of the template are necessary and add individual content to the document. If the template is empty, new records will always appear empty upon creation.

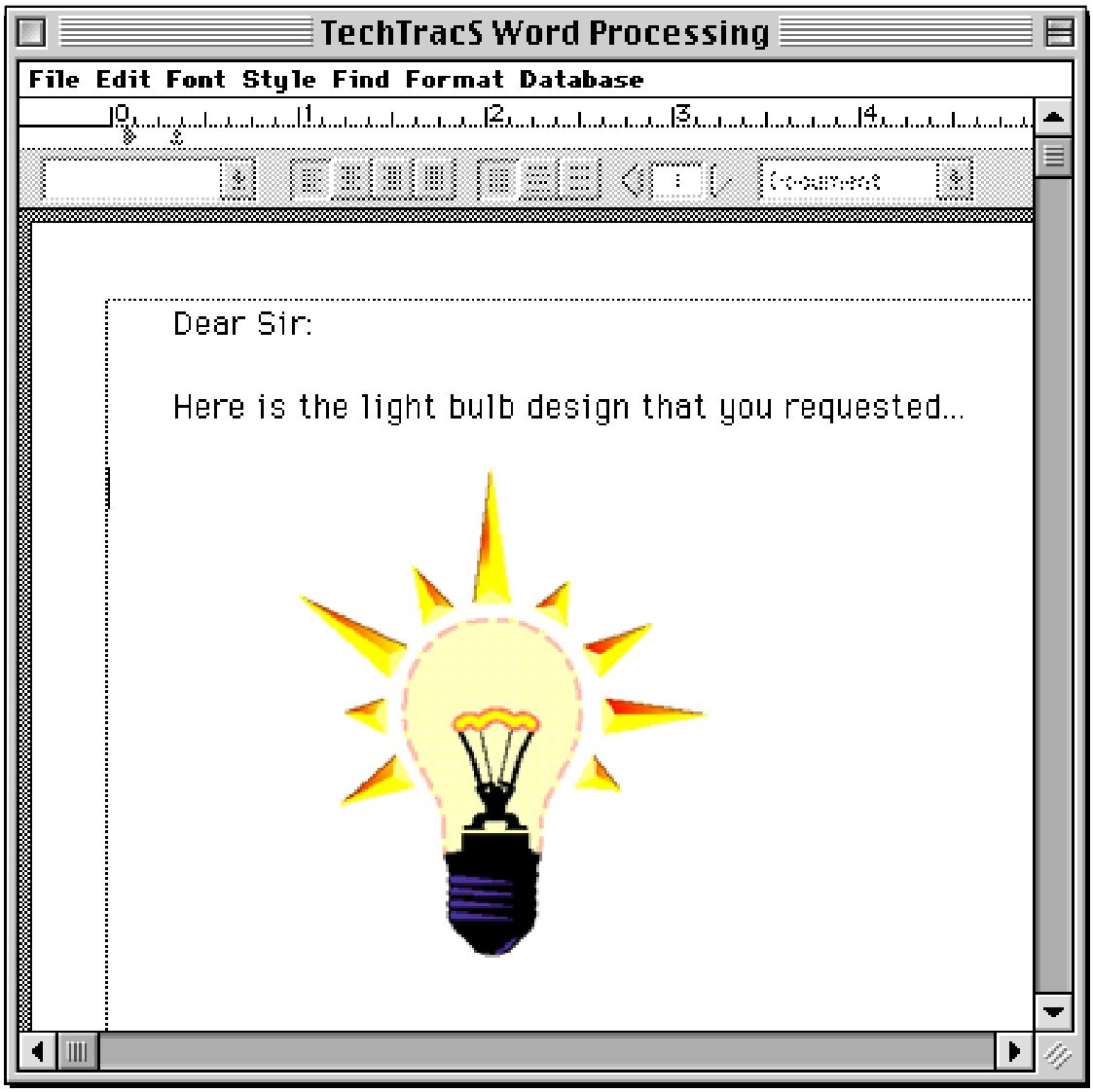
Select "*Save As Template*" from the "***File***" menu to display the following dialog. Click the **OK** button to replace the existing template for this form.



All NASA TechTracS users get the same template information for this form for every new record created.

Pictures

Pictures can be pasted into 4D Write documents from the clipboard.



MacOS and Windows Operating Systems' ShortCuts

MacOS Shortcuts

Insertion of objects

Display menu of fields in the master file.
- Option+click in the 4D Write area

Display menu of files and fields.
- Option+Shift+click in the 4D Write area

Display menu of files and fields in the Enter Variable or Command dialog box.
- Option+Shift+click in the Enter Variable or Command dialog box

Display the insertion dialog box for an object (field, expression, etc.).
- Ctrl+double-click on an inserted object

Display the Choose Format dialog box.
- +double-click on an inserted object

Interface

Cancel a dialog box
- +Shift+. or Escape

Exit the 4D Write area
- +Tab

Navigation in text

Move the cursor to the end of a word.
- Control+right arrow key

Move the cursor to the start of a word.
- Control+left arrow key

Move the cursor to the end of a paragraph.
- Option+right arrow key

Move the cursor to the start of a paragraph.
- Option+left arrow key

Text formatting

Select style sheets (1,2,...10)
- +1, +2,... 10

Make font size larger
- +[

Make font size smaller
- +]

Ruler and tabs

Select the paragraph to which the ruler applies
- Double-click in the graduated part of the ruler

Create a left-aligned tab
- Click in the white part of the ruler

Create a right-aligned tab
- ⌘+click in the white part of the ruler

Create a decimal tab
- ⌘+Shift+click in the white part of the ruler

Create a center-aligned tab
- Shift+click in the white part of the ruler

Display the Tab Options dialog box
- ⌘+click or double-click a tab

Copy ruler
- ⌘+Shift+D

Paste ruler
- ⌘+Shift+G

Management of images

Rescale the image to 100%.
- Click handle in upper right corner of a picture

Display the Resize Picture dialog box.
- ⌘+click handle in upper right corner of a picture

Search and Replace

Search for tabs
- ⌘+Tab in the Find dialog box

Replace tabs
- ⌘+Tab in the Find & Replace dialog box

Search for carriage returns
- ⌘+Return in the Find dialog box

Replace carriage returns
- ⌘+Return in the Find & Replace dialog box

Find
- ⌘+Shift+F

Find next
- ⌘+Shift+N

Print Preview

Zoom
- Click in the Print Preview window

Return to full page view
- ⌘+click in the Print Preview window

Windows Shortcuts

Insertion of objects

Display menu of fields in the master file.
- Alt+click in the 4D Write area

Display menu of files and fields.
- Alt+Shift+click in the 4D Write area

Display menu of files and fields in the Enter Variable or Command dialog box.
- Alt+Shift+click in the Enter Variable or Command dialog box

Display the insertion dialog box for an object (field,expression, etc.).
- Double-click the right button on an inserted object

Display the Choose Format dialog box
- Ctrl+double-click on an inserted object.

Interface

Cancel a dialog box.
- Escape

Exit the 4D Write area.
- No keyboard equivalent

Navigation in text

Move the cursor to the end of a word.
- Ctrl+right arrow key

Move the cursor to the start of a word.
- Ctrl+left arrow key

Move the cursor to the end of a paragraph.
- Alt+Ctrl+right arrow key

Move the cursor to the start of a paragraph.
- Alt+Ctrl+left arrow key

Text formatting

Select style sheets (1,2,...10)
- Ctrl+1, Ctrl+2,...10

Make font size larger
- Ctrl++

Make font size smaller
- Ctrl+<

Ruler and tabs

Select the paragraph to which the ruler applies.
- Double-click in the graduated part of the ruler

Create a left-aligned tab.
- Click in the white part of the ruler

Create a right-aligned tab.
- Ctrl+click in the white part of the ruler

Create a decimal tab.
- Ctrl+Shift+click in the white part of the ruler

Create a center-aligned tab.
- Shift+click in the white part of the ruler

Display the Tab Options dialog box.
- Ctrl+click or double-click a tab

Copy ruler.
- Ctrl+Shift+D

Paste ruler.
- Ctrl+Shift+G

Management of images

Rescale the image to 100%
- Click handle in upper right corner of a picture

Display the Resize Picture dialog box.
- Ctrl+click handle in upper right corner of a picture

Search and Replace

Search for tabs
- No keyboard equivalent

Replace tabs
- No keyboard equivalent

Search for carriage returns
- Ctrl+Return in the Find dialog box

Replace carriage returns
- Ctrl+Return in the Find & Replace dialog box

Find
- Ctrl+Shift+F

Find next
- Ctrl+Shift+N

Print Preview

Zoom
- Click in the Print Preview window

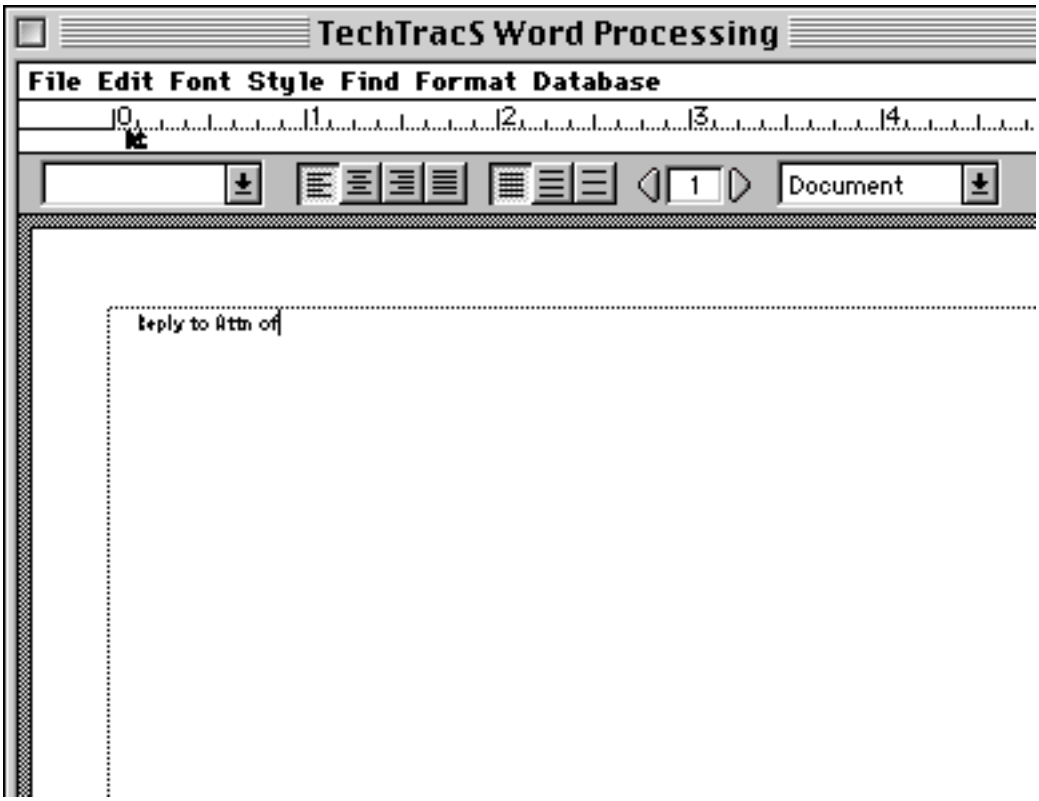
Return to full page view
- Ctrl+click in the Print Preview window

For 4D Write Error Codes see **Appendix D.**

Tutorials

Tutorial #1: Creating a default Template

Creating a template is helpful so that the document style does not have to be recreated every time a new document is created.



1. From the Data Control Panel, select the **Add** button.
2. Double-click on the **Documents** table.
3. In the 4D Write area type "`Reply to Attn of`".
4. Select "*Select All*" from the "***Edit***" menu.
5. Select "*9*" item from the "***Style***" 4D Write menu.
6. Select "*Smaller*" item from the "***Style***" 4D Write menu.
7. Select "*Smaller*" item from the "***Style***" 4D Write menu.
8. Change the starting left position of the "Reply to Attn of" to 1/16" on the ruler.

9. Select “*Save as Template*” item from the “***File***” 4D Write menu to create a template for the 4D Write area for the Documents table. Note: Whenever you select “*Save as Template*” item from the “***File***” menu, your default template becomes whatever is present in the 4D Write area for that area only.

Tutorial #2: Creating a 4D Write File

1. Create a tab position 7/8" on the same line as the "Reply to Attn of" by double-clicking directly below ruler position 7/8". Accept the default settings.

2. Place the cursor directly to the right of “Reply to Attn of." Press the tab key once.

3. Select “*12*” item from the “***Style***” 4D Write menu.

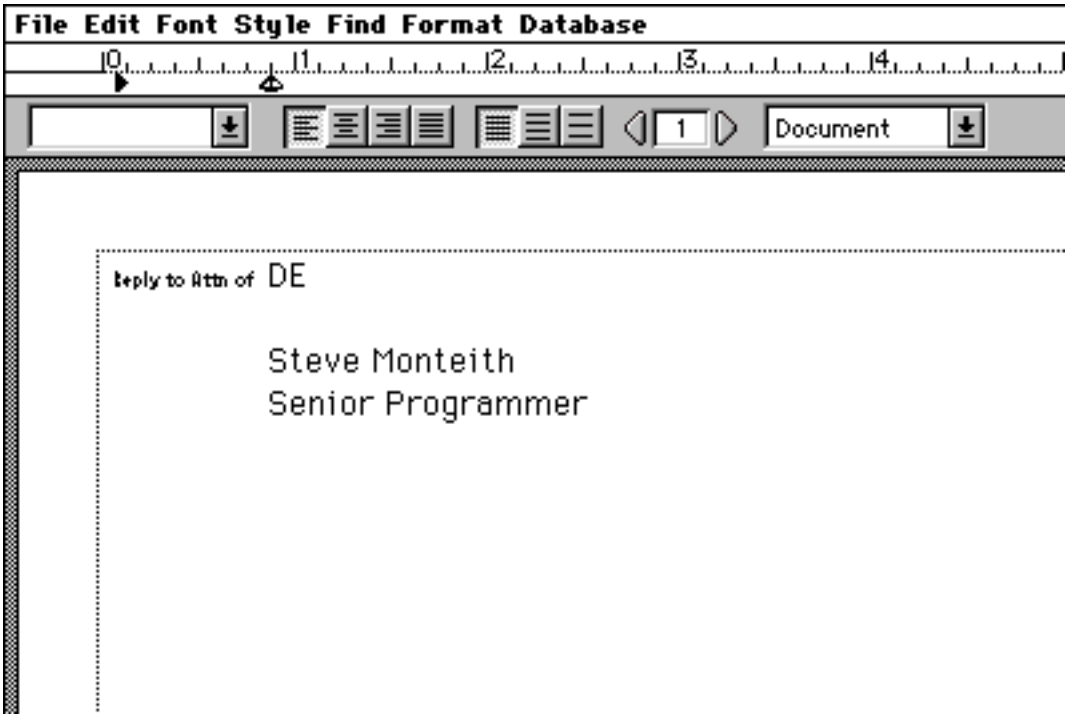
4. Type in your mail stop next to the "Reply to Attn of."

5. Add a couple of carriage returns.

6. Move the left margin position to 7/8”

7. Next, type in your name followed by a carriage return.

8. Type your title below your name.



9. Select "*Save as*" item from the "***File***" 4D Write menu to create a 4D Write file on your computer. Use the name "My4Doc.4wr" as the filename.

10. Close the window.

Note: You can share 4D Write files with other NASA TechTracS users. To share a 4D Write file created on a Mac to a PC user, the filename must have the extension ".4wr" (ie my4Doc.4wr). Hence, you could email the document as an enclosure to other users.

Tutorial #3: Adding the Current Date

1. Zoom the window by selecting "*Go to full window*" item from the "***File***" menu.

2. Select "*Select All*" from the "***Edit***" menu.

3. Move the right margin to position 6-3/4".

4. Place the cursor directly to the right of your mail stop.

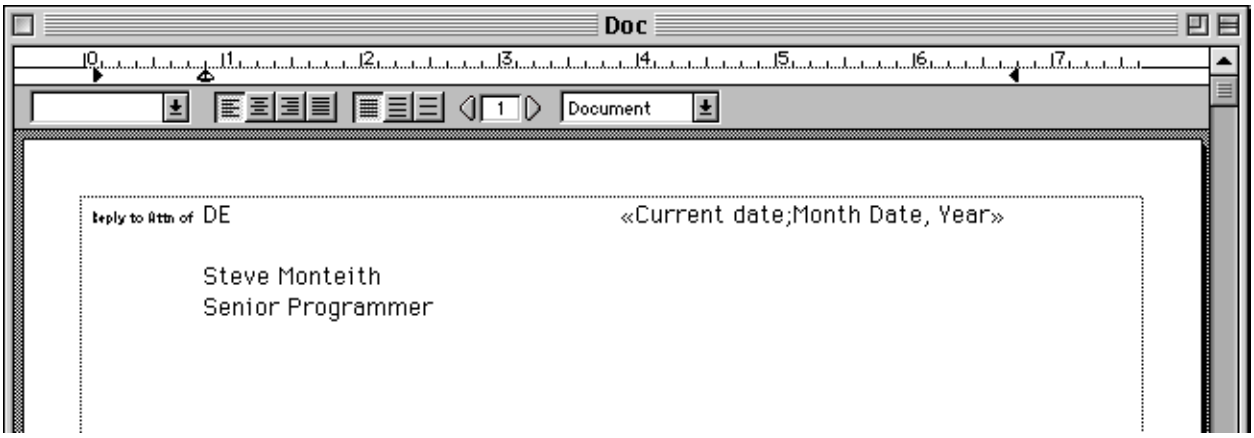
5. Create a tab position just to the left of 6-3/4" on the same line as the "Reply to Attn of" by double-clicking directly below ruler position 6-3/4". Choose right tabulation from the tab dialog.

6. Click the tab key once.

7. Select "*Insert Current Date*" from the "***Database***" menu bar.

8. Click once on the 4D Expression "<<Current Date>>" to select the expression.

9. Select "*Format...*" item from the "***Database 4D***" Write menu. Scroll down to find the format **Month, Date, Year** and click once on it and click the **OK** button.



10. Select “*Save As Template*” form the “***File***” menu.

11. Select “*Save As*” item for the “***File***” 4D Write menu to save the file on your computer. Use the name "My4Doc2.4wr" as the filename.

Letters

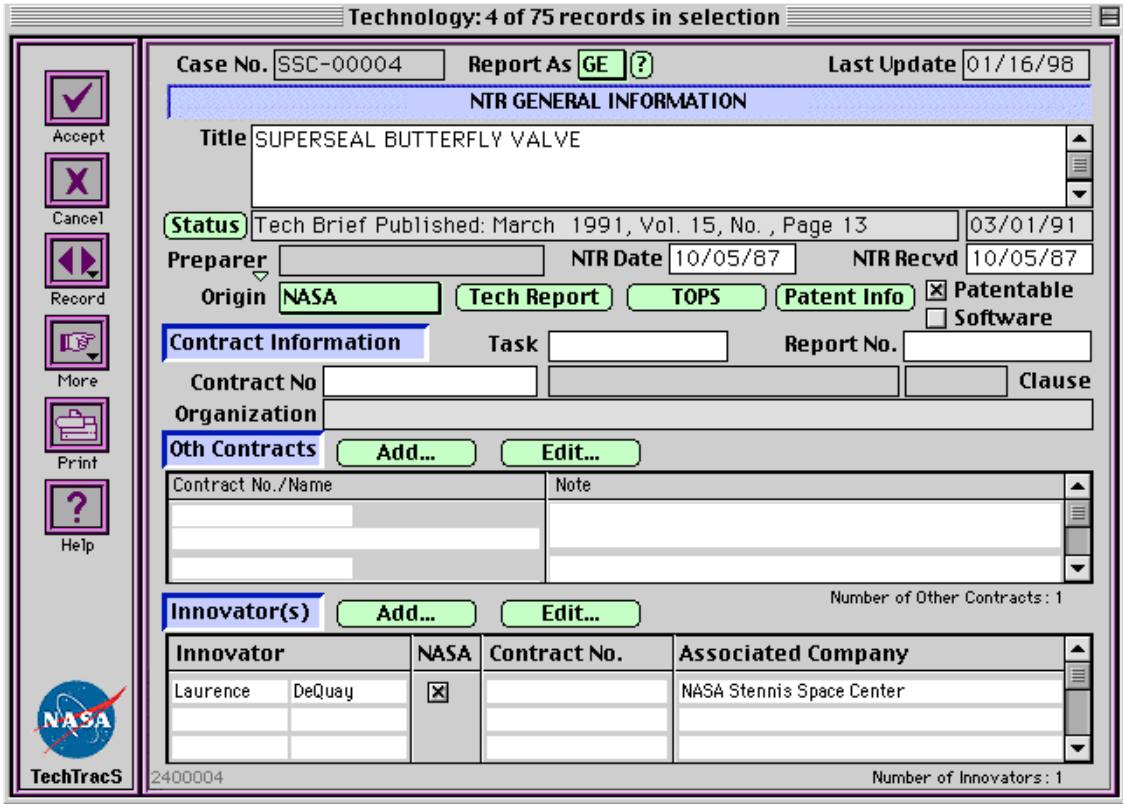
Printing a Letter from Data Input
Queue Manager
Printing Letters
Modifying or Creating A Letter
Enclosures
Importing or Exporting a Letter
E-Mailing Letters

Overview

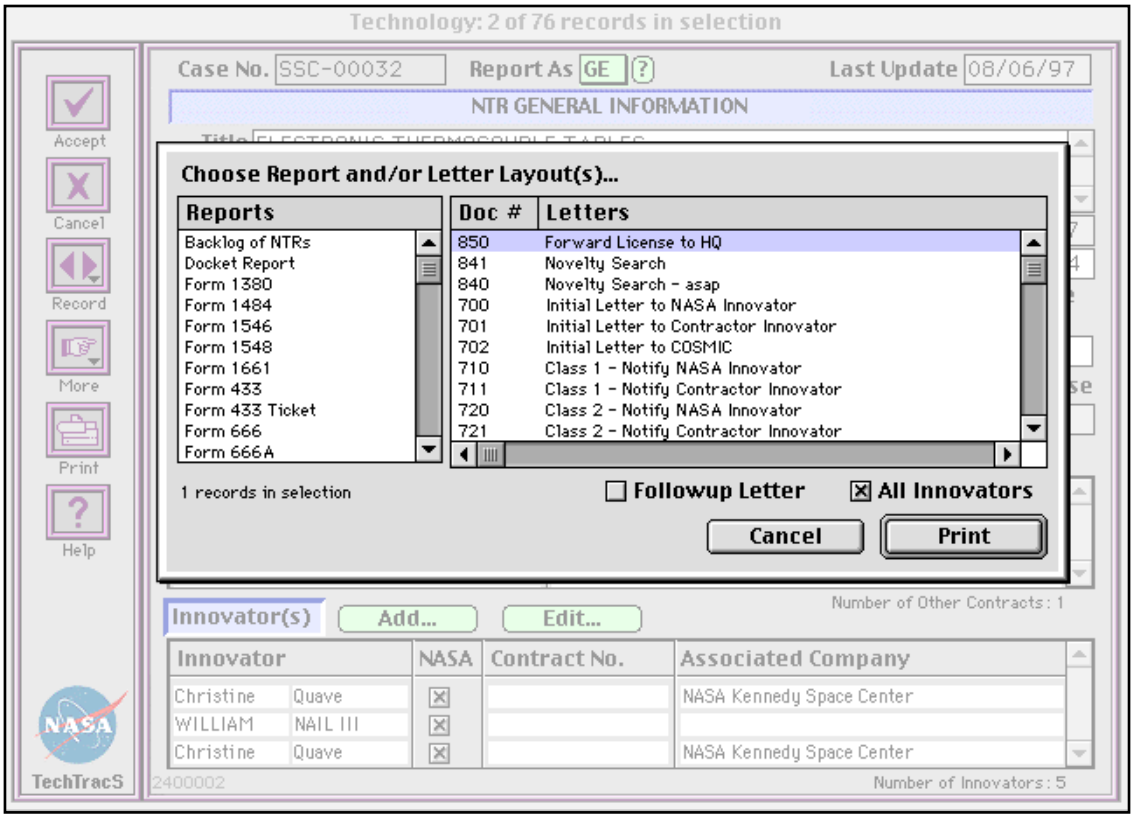
NASA TechTracS stores various pre-formatted letters & documents for printing combined with data from records from any table in the database. Users can also create their own letters & documents using the various options in NASA TechTracS.

Printing a Letter from Data Input

A letter can be printed using data from the following technology.



When a technology record is open, click on the **Print** button to display a list of reports and letters.

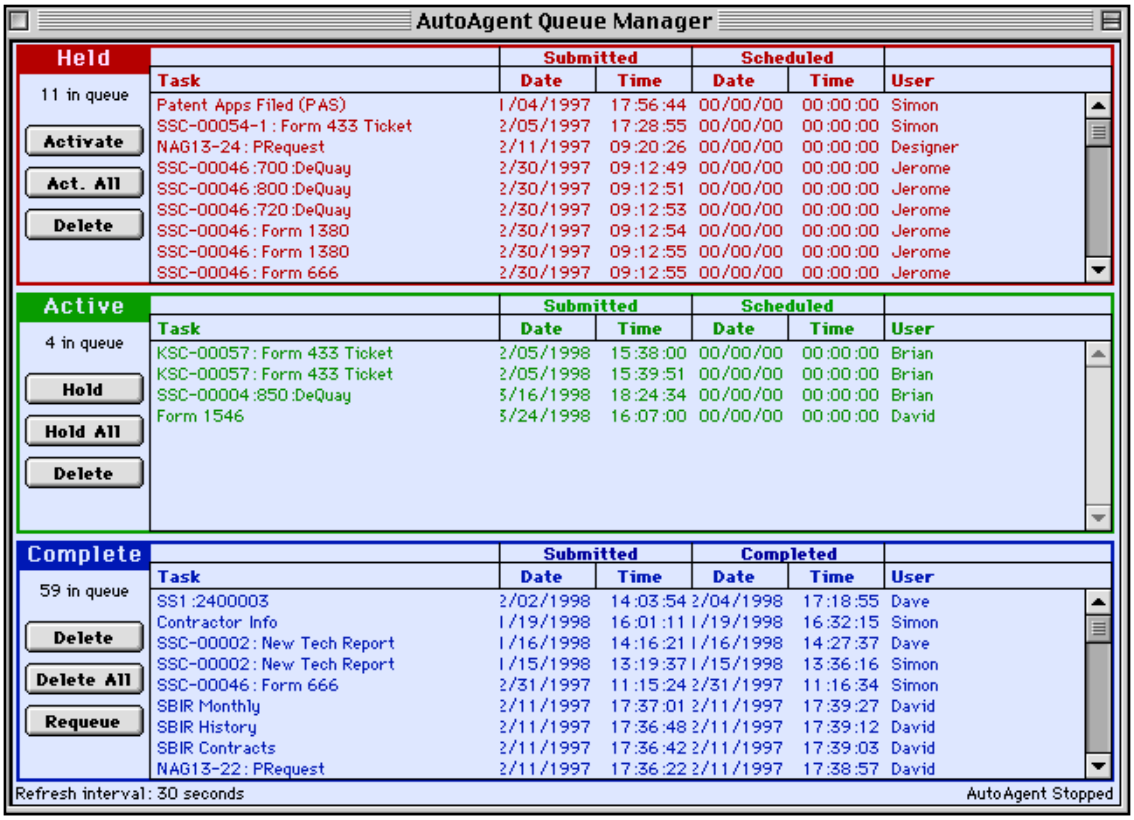


The scrollable area on the right of the window contains all of the letters applicable to the current database table, in this case, the [Technology] table. Highlight the desired letter and click the **Print** button to begin the printing process. The print job is placed in the print queue for processing and is present in the Queue Manager.

Multiple reports & letters can be selected by Shift-clicking or Command-clicking (Control-click on Windows) on the items.

Queue Manager

The queue manager has three areas that contain tasks. The "Held" queue contains all tasks specified to be held until the user activates them. Select a task in the "Held" queue and click the **Activate** button to move the task to the "Active" queue. To put a task on hold, select the task in the "Active" queue and click the **Hold** button to send the task to the "Held" queue. The "Complete" queue contains all tasks that have been completed. To rerun a task, select the task in the “Complete” queue and click the **Requeue** button.



Buttons in the Queue Manager Window

Held Queue

Activate - Send the task to the Active queue.
Act. All - Send all Held tasks to the Active queue.
Delete - Completely remove the task.

Active Queue

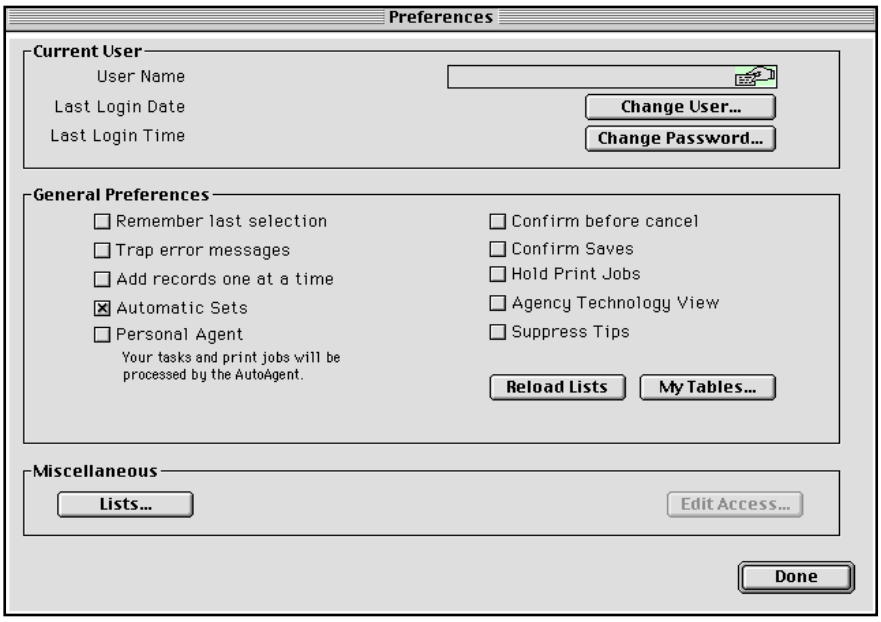
Hold - Send the task to the Held queue.
Hold All - Send all Active tasks to the Held queue.
Delete - Completely remove the task.

Complete Queue

Delete - Completely remove the task.
Delete All - Completely remove all the tasks from the Complete queue.
Requeue - Send the task to the Active queue.

In the user preferences section of NASA TechTracS (accessible from the Data Control Panel by clicking the **Prefs** button or by selecting "*Preferences*" from the "***File***" menu), the user can specify that tasks should be processed by the AutoAgent machine or locally on the client machine. If the checkbox in the General Preferences section labeled "Personal Agent" is checked, tasks are processed on the client machine. Otherwise, tasks are processed by the NASA TechTracS AutoAgent machine. When the "Personal Agent" is checked, the users see only their own tasks in the Queue Manager. When the "Personal Agent" is unchecked, the user can see all tasks in the Queue Manager.

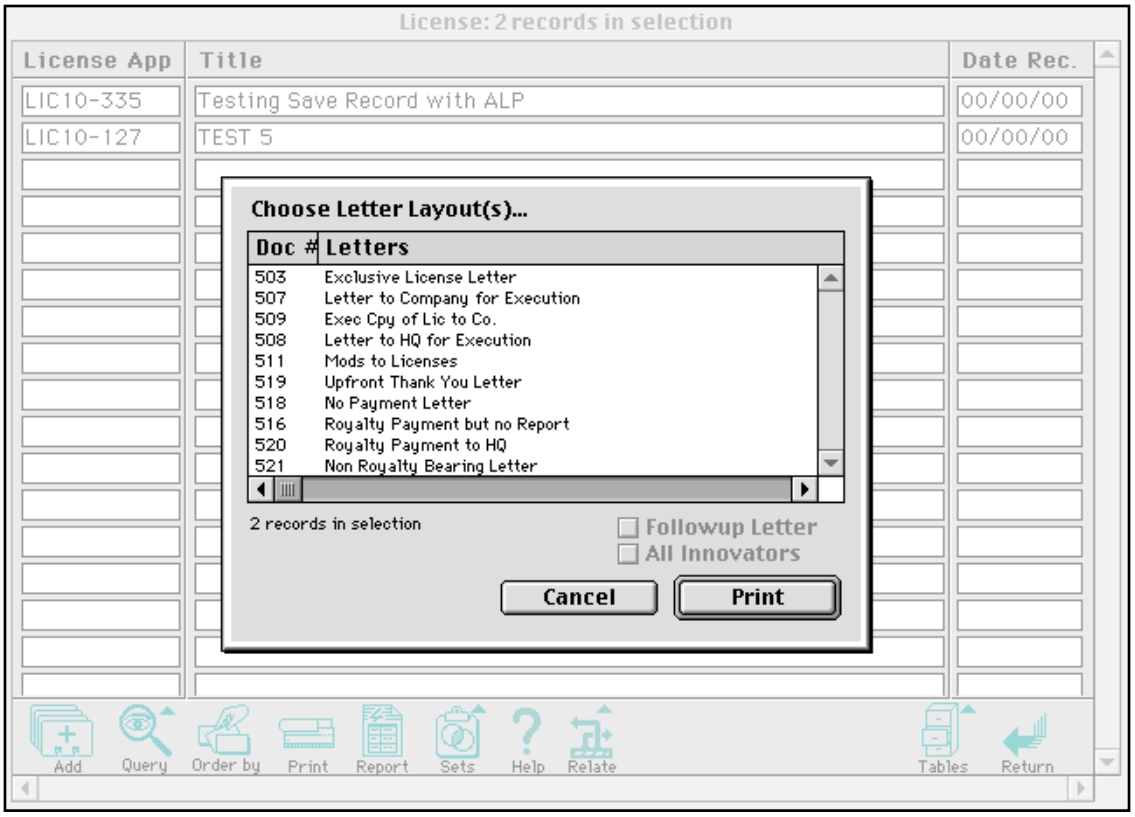
If the "Hold Print Jobs" checkbox is checked, all letters are placed in the Held Queue of the Queue Manager. This would prevent the letters from printing until a user moves them into the "*Active Queue*".



Printing Letters

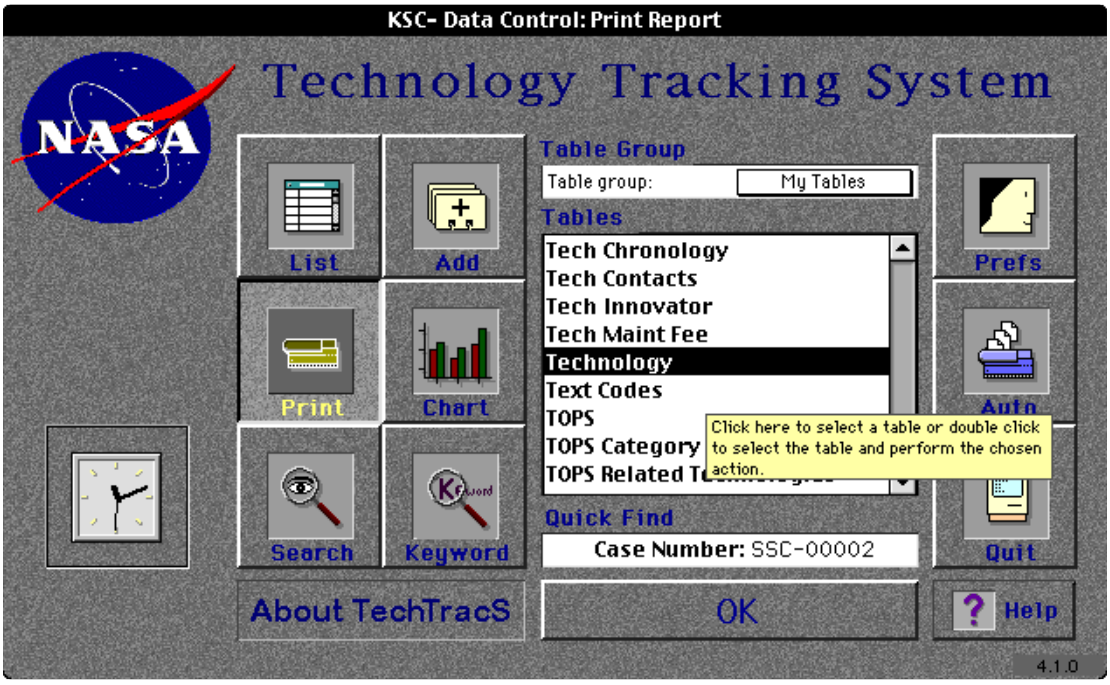
Printing a Letter from the List Screen

Users can print letters from a listing screen. A letter for all records currently in view is printed.



Printing a Letter from the Data Control Panel

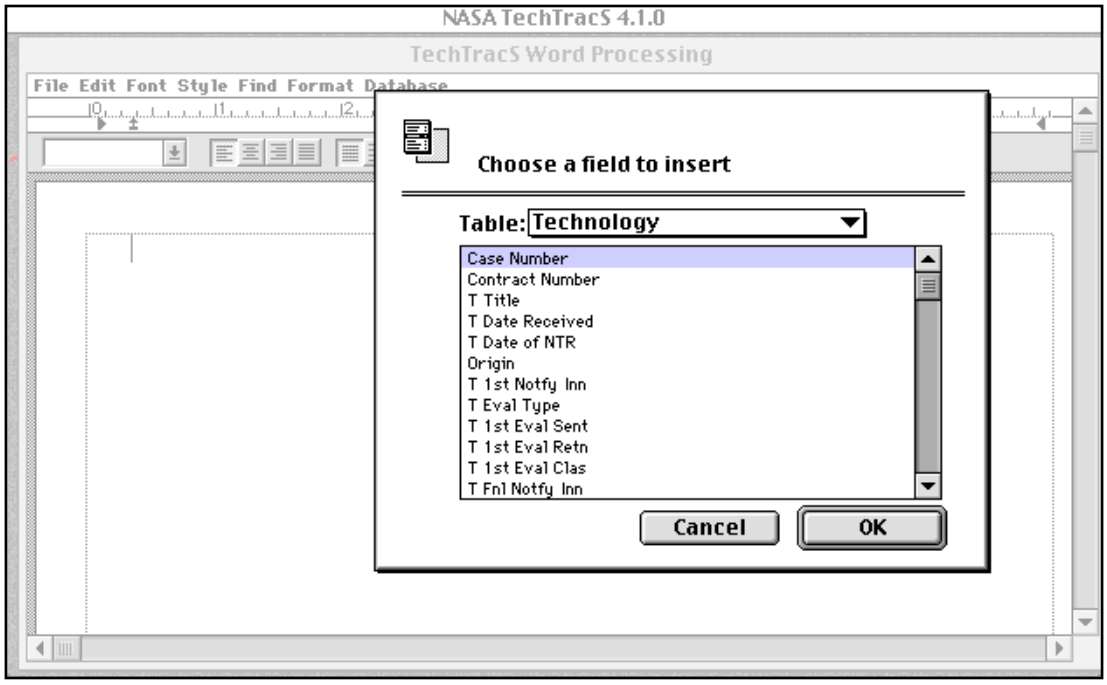
A letter can be printed from the Data Control Panel by selecting the relevant table from the scrollable list, entering the appropriate "*Quick Find*" value, and clicking the **Print** button.



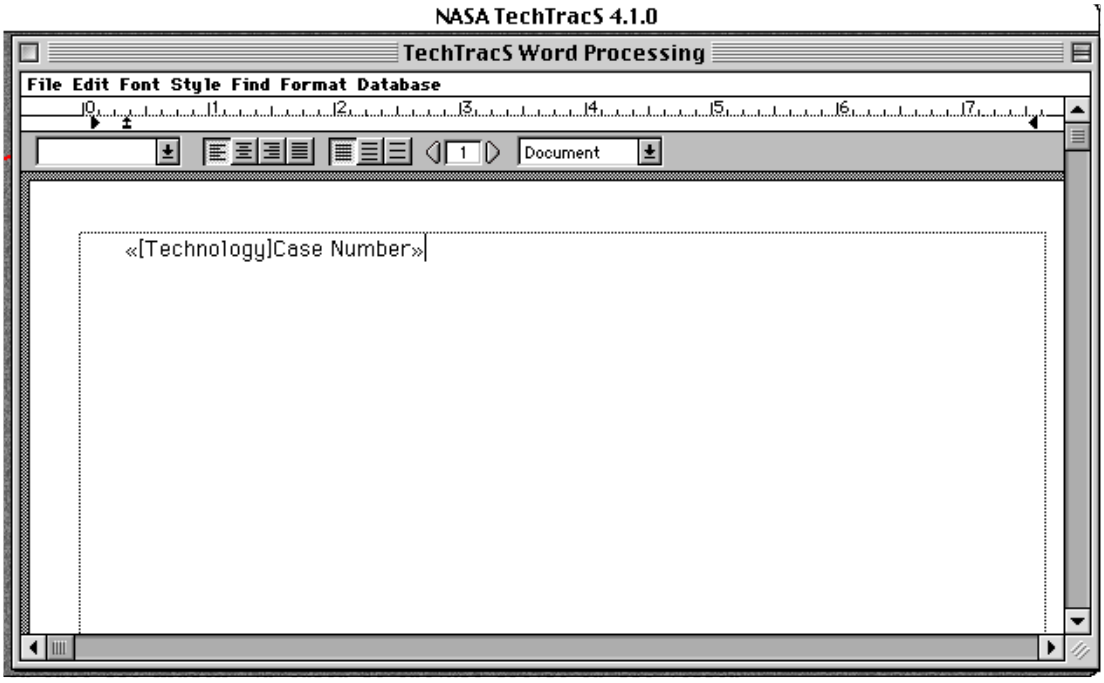
Printing a Letter from Word Processing

A letter can be printed from NASA TechTracS word processing by selecting "*Word Processing*" from the "***Report***" menu. When the word processing window is open, the user can open previously saved letters or type the letter into the window. In order to include fields in the letter, select "*Print Merge*" from the "***File***" menu. A dialog is displayed prompting for the appropriate table. Search for the records desired in the letter or letters, and order the selection of records to be printed.

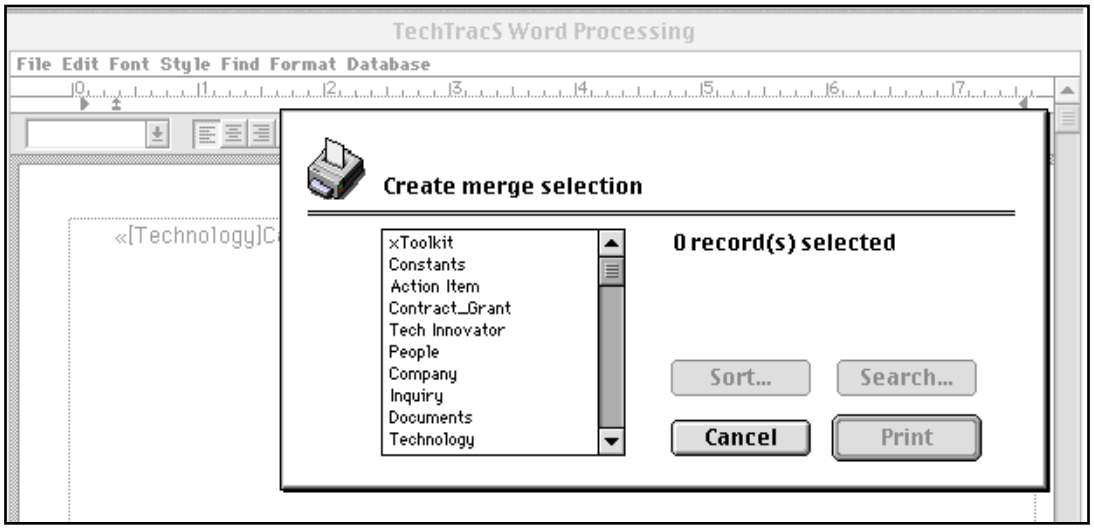
When creating a letter to print, A NASA TechTracS field can be inserted as shown below.



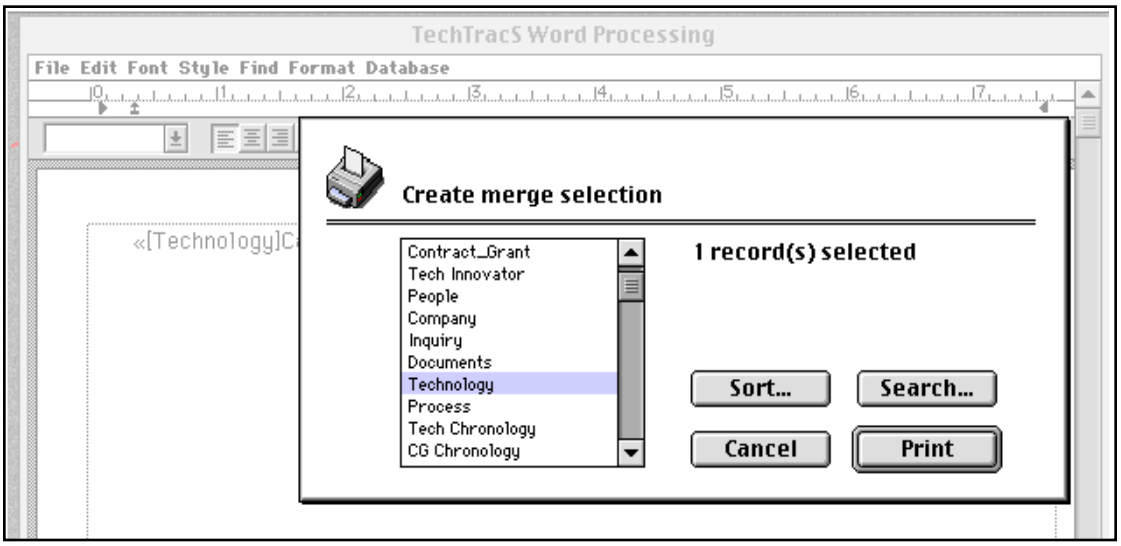
After selecting the field, it will appear in the letter enclosed by these characters : <<,>>.



NASA TechTracS will then prompt for a "merge selection" because a specific table has not been chosen. Clicking on the desired table name in the scrollable list to locate the records containing data for the letters.



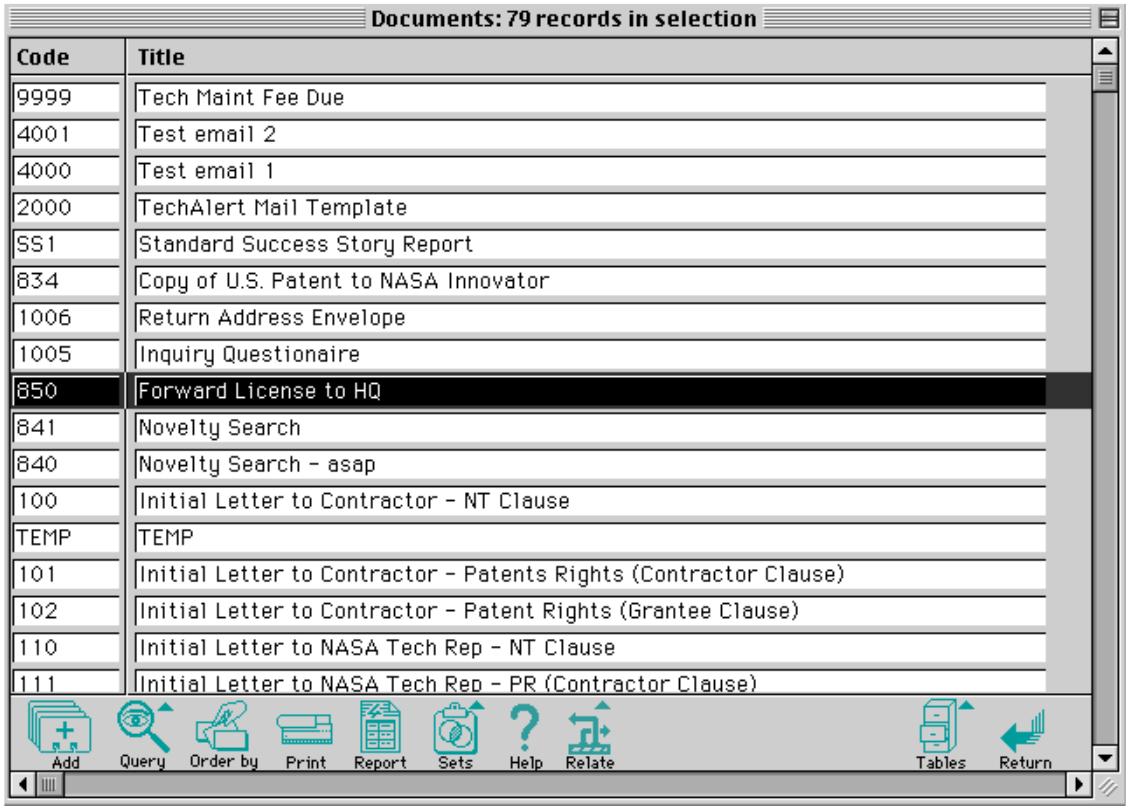
Then click the **Search** and **Sort** buttons to build and order the record selection using the standard NASA TechTracS Query and Sort editors.



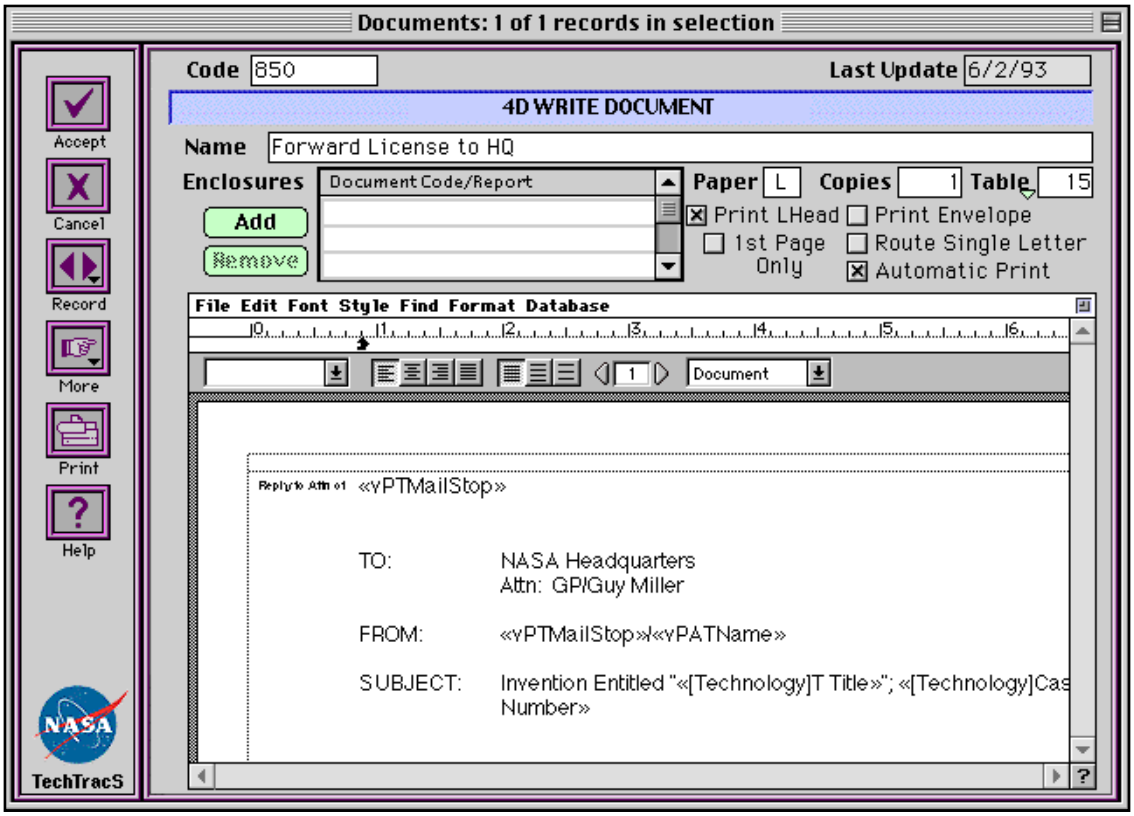
Clicking 'Print' will print the letter once for every record in the selection.

Modifying or Creating a Letter

The NASA TechTracS letters are stored in the Documents table as shown below:



Double-click a record from the [Documents] table to view or edit the setup options for a specific letter. In the [Document] input form, specify the relevant table, enclosures, type of paper, number of copies, contents, and name of the letter. The popup specifying the table for the letter contains all of the table names in NASA TechTracS. The selection appears as a number representing the position of the table in the database.



1. **Code**
   Uniquely identifies the letter and is usually also placed in the right hand footer.

2. **Last Update**
   The date the letter was last updated.

3. **Title**
   Document title for user identification.

4. **Enclosures**
   Most of the time are documents themselves and must be created beforehand.

5. **Paper**
   Choices are:
   A - Multi-purpose tray
   E - Envelope
   G - Legal
   L - Letter

6. **Copies**
   Indicates how many copies are to be printed.

7. **Table**
   The table in NASA TechTracS from which the document may be printed.

8. **Print LHead**
   To print the NASA letter head on the document (see [Constants] table).

9. **1st Page Only**
   To print the letter head on only the first page.

10. **Print Envelope**
    To automatically print 100, 500, 700, 800 series envelopes.

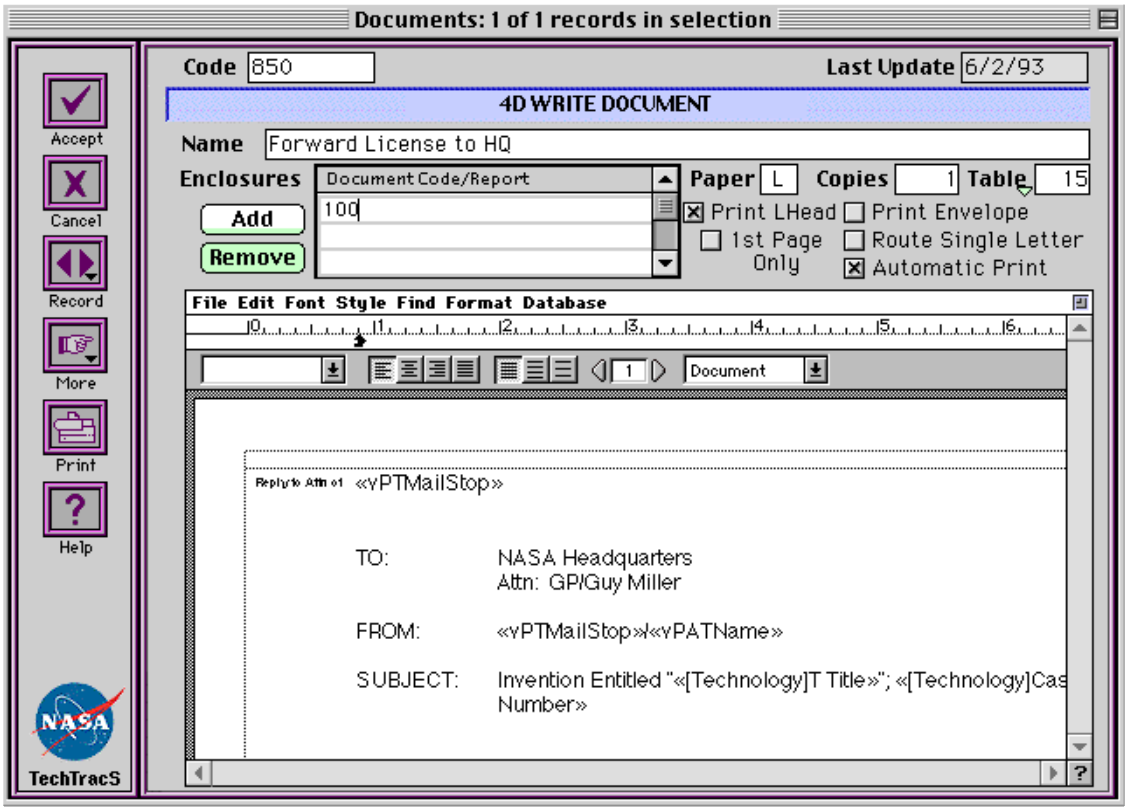
11. **Route Single Letter**
    Not in use

12. **Automatic Print**
    To turn on automatic printing of 100, 500, 700, 800 series letters where applicable.

13. **4D Write**
    The lower half of the window contains the 4D Write word processing area. See 4D Write on Page 81.

Enclosures

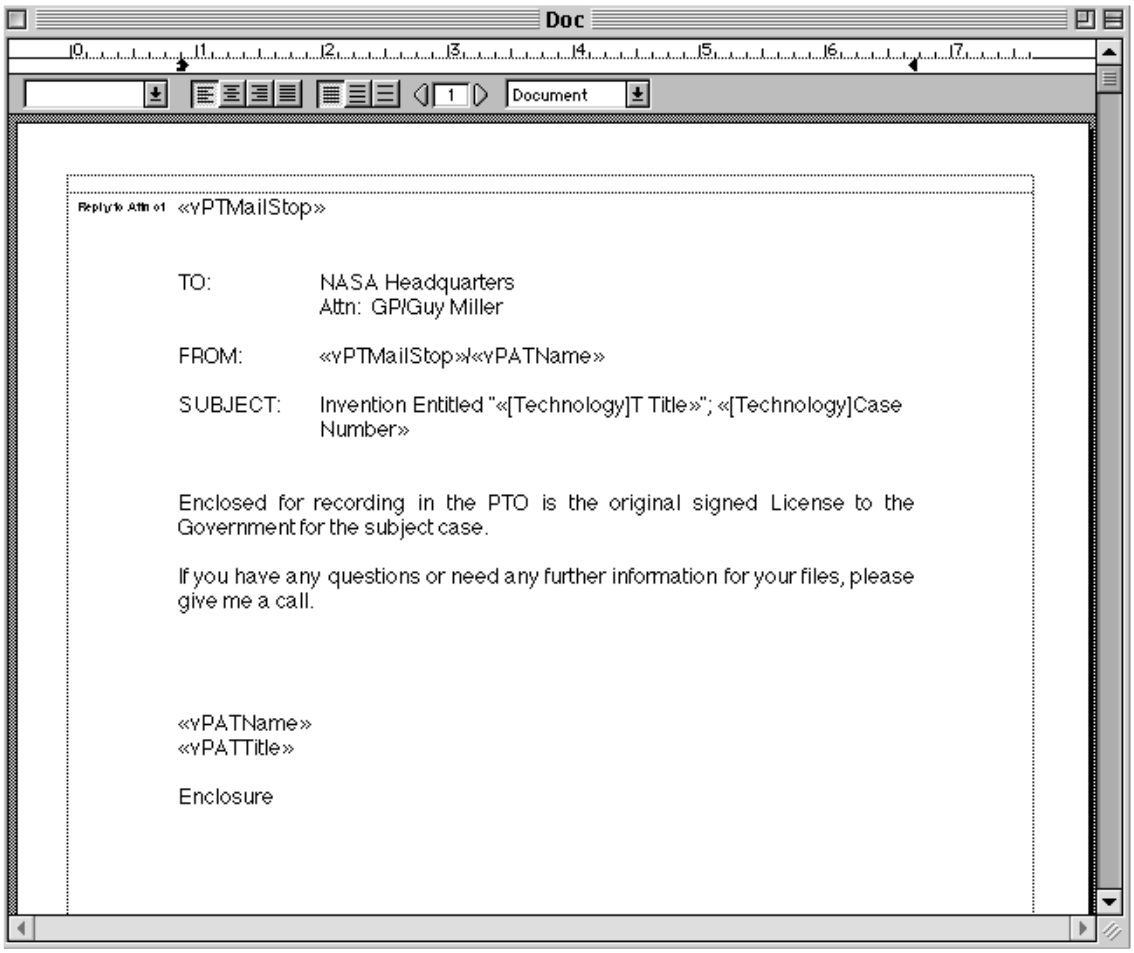
An enclosure is a document that is printed every time its associated document is printed. Click the **Add** button to add an enclosure. A document cannot be enclosed by itself. For multiple copies, specify a number greater than 1 the copies field.



If adding a new document, specify a number greater than 1000 for its Code, unless the letter is sent to innovators. Innovator letters are numbered from 699 to 899. Contract Grant letters are numbered from 100 to 199.

The area of the form containing the document has its own formatting menu options which are used to insert table fields, variables, and special functions into the document.

Click the button in the upper right corner of the editing area to edit the document in full screen mode.

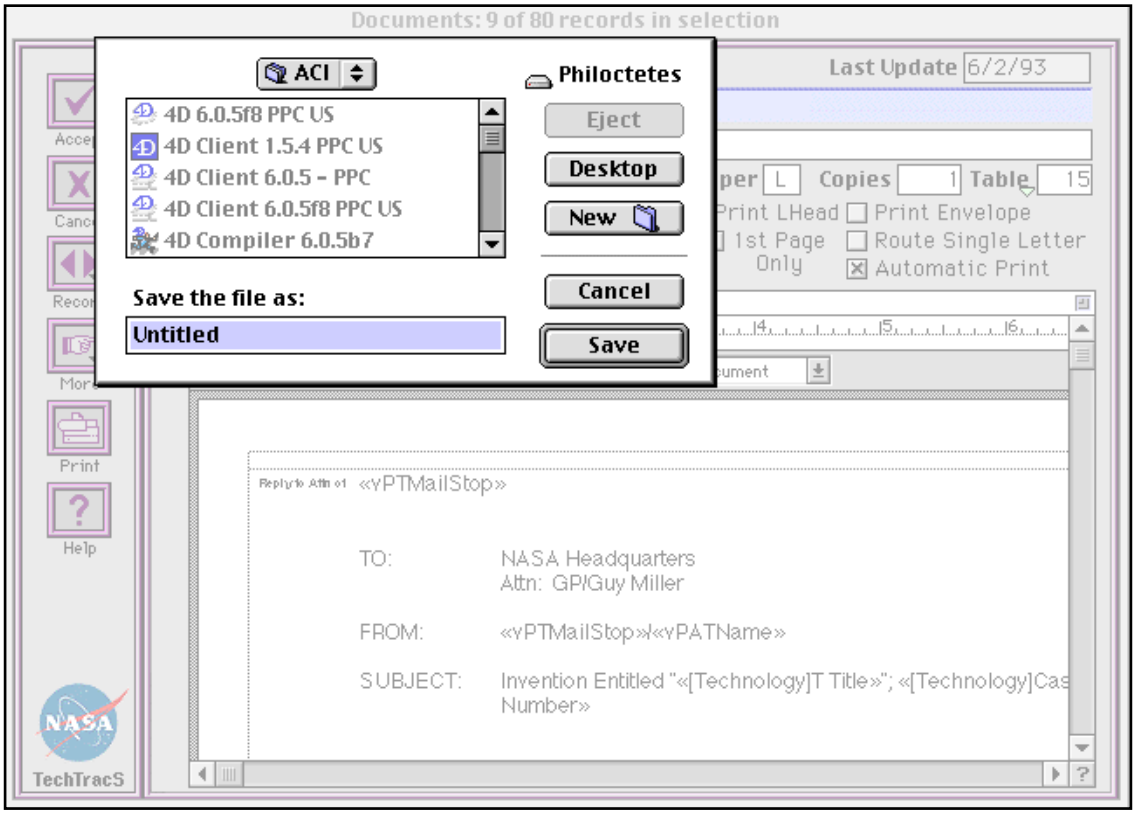


Click the button in the upper right corner of the document again to return to the document input form.

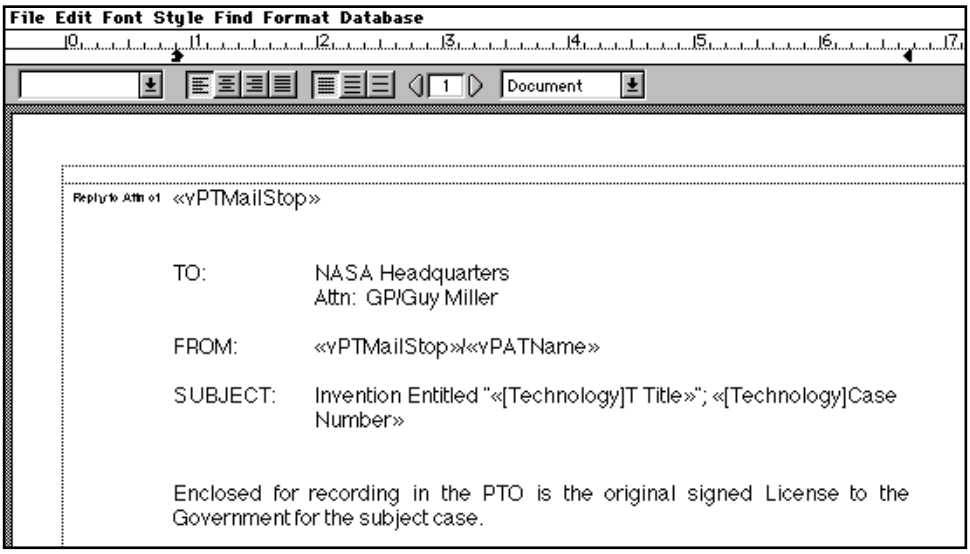
Importing or Exporting a Letter

Exporting

To export a letter for exchange with other field centers, for archiving purposes or to work with the letter in the NASA TechTracS word processing module, select "*Save As*" from the "***File***" menu of the 4D Write editing area. This will cause the following dialog to be displayed prompting for a name and place to save the document.

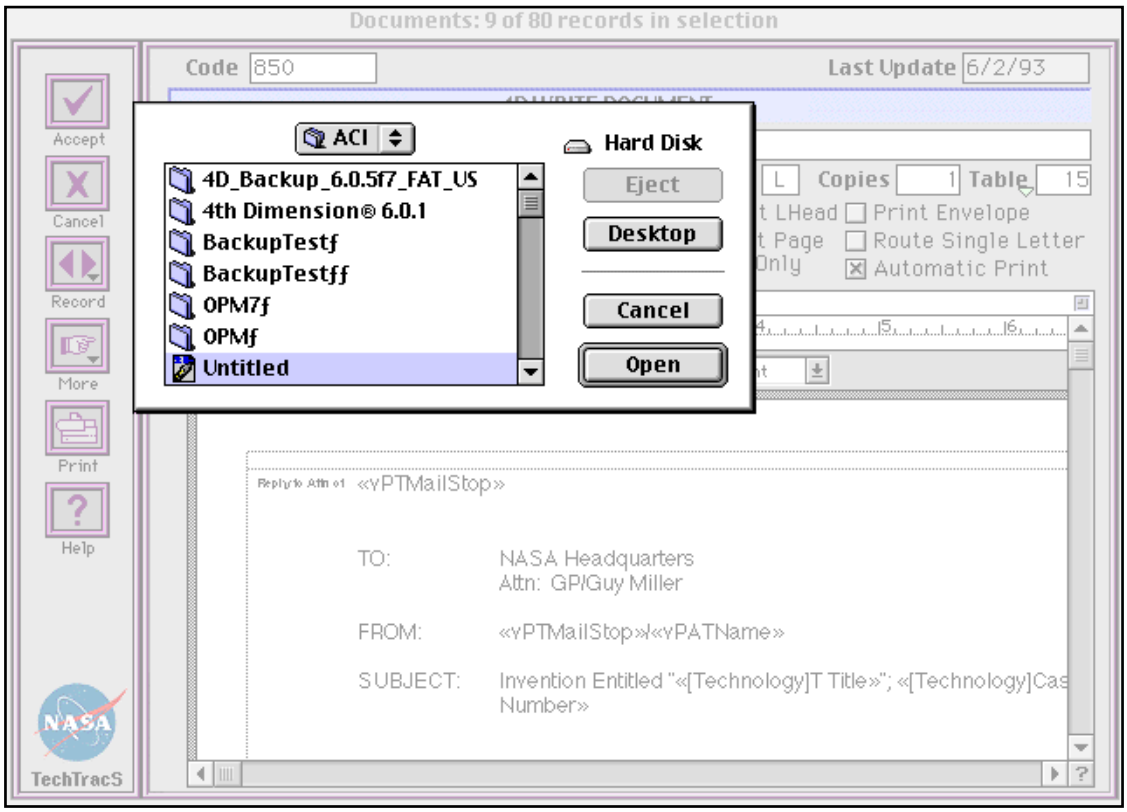


After exporting, the document can be opened and edited from the NASA TechTracS Word processing module with 4D Write as pictured below.



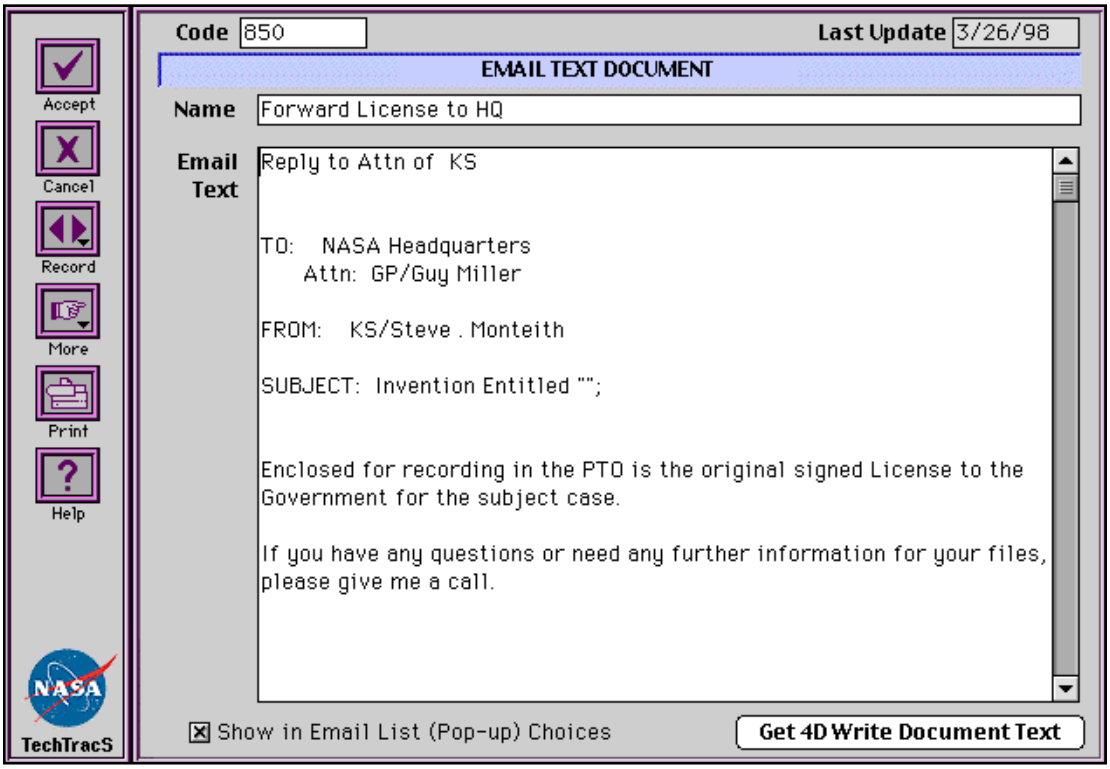
Importing

To import a letter received from another field center or from an archive, select "*Open*" from the "***File***" menu of the 4D Write editing area.



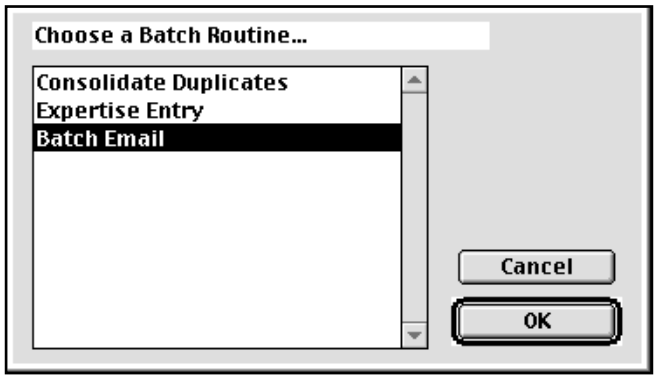
Emailing Letters

Click the **More** button of the document input form to modify the optional email parameters of the document. Click on the **Get 4D Write Document Text** button in the lower right of the form to copy the text of the document from page one of this form into the text area. The checkbox labeled "Show in Email list" can then be checked. This text area is then ready for email or can be further edited.

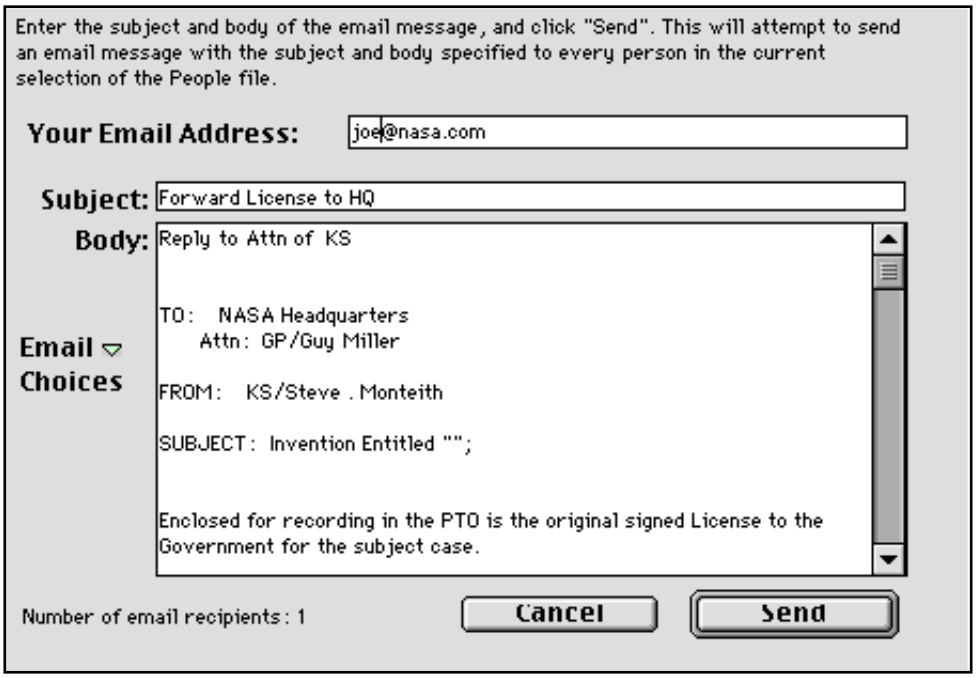


Batch Update

Select the Batch Email item to send email to anyone in the [People] table. The only requirement is to be viewing the [People] table with one or more records selected.



The following dialog is presented with the Email Choices pop-up on the left which contains all of the letters that can be emailed.

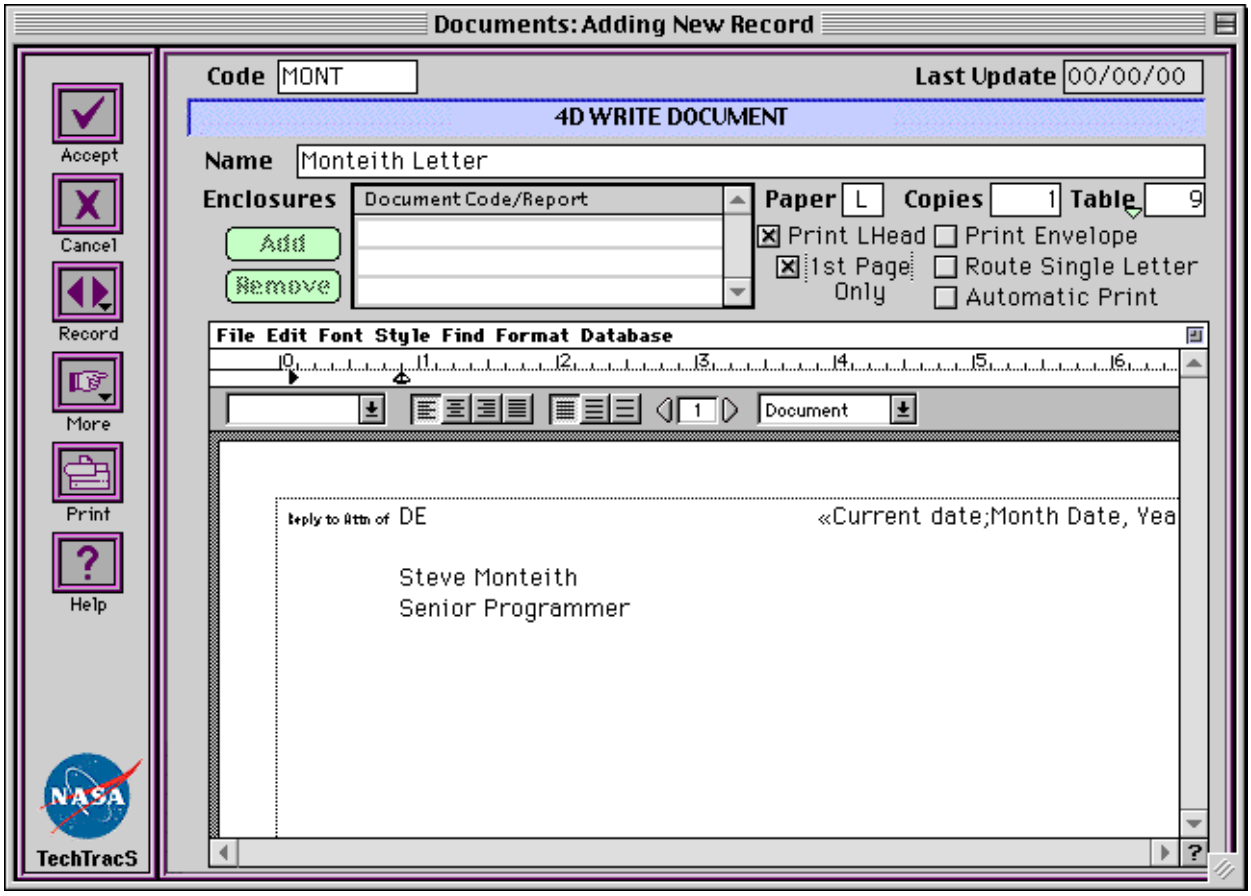


NOTE: *For Lists of the various letters see* **Appendix C**.

Tutorials

Tutorial #1: Creating a new Letter in the Documents Table

Creating a reminder letter to the Contractor reminding them of an interim report.



1. Click in the **Code** field and type in the first four letters of your last name.

2. Tab to the **Title** field and type your last name followed by the text "`Letter`".

3. Click and hold on the **Table #** popup. Select Contract_Grant. This will make the document available for printing from the **Contract_Grant** table.

   Notice that 9 is the table number for **Contract_Grant**.

4. **Paper** field will stay at the default of L because we are going to print on letter size paper. Copies will stay at the default of 1 because we only want 1 copy.

5. Check **Print LHead** check box so that NASA TechTracS will insert the field center letter head in the header of the document.

6. Check **1st Page Only** check box so that the field center letter head will only be on the first page.

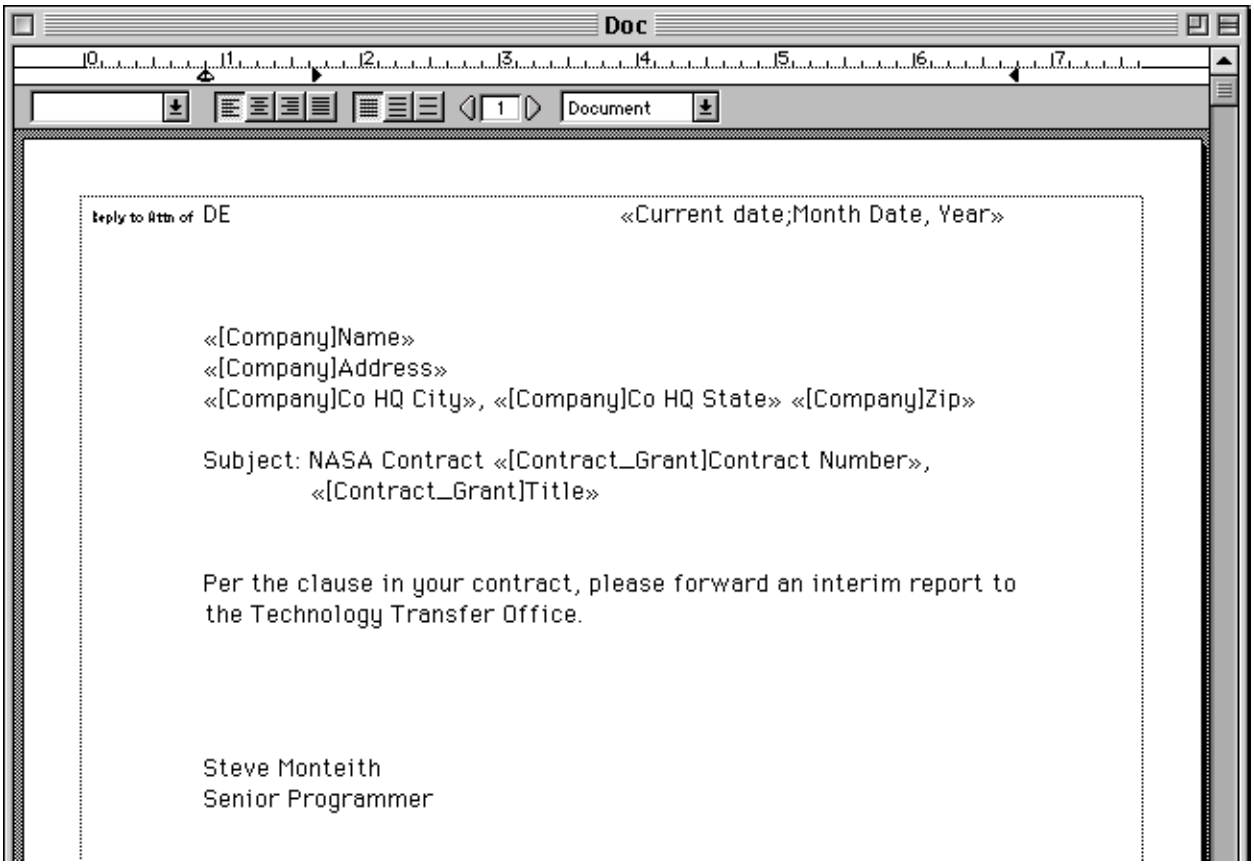
7. **Print Envelope/Route Single Letter/Automatic Print** have no meaning on letters that are not automatically or printing by NASA TechTracS.

8. Select "*Open*" item from the "***File***" 4D Write menu select "MyDoc2.4wr".

9. Save the record by clicking on the **Accept** button.

10. Click **Cancel**. Note: This step is not required if Preferences **Add Records one at a Time**.

Tutorial #2: Adding Fields



11. Click on the fourth line after the mail stop and select ***"Insert field..."*** from the ***"Database"*** 4D Write menu bar.

12. Select the Table **Company**. Select the field **Name** and click **Ok**.

Note: If only "«»" is displayed on the screen then select "*Show references*" item from the "*Database*" 4D Write menu to display the field correctly.

13. Add a carriage return after the «**[Company]Name**» field reference.

14. Select "*Insert field...*" item from the "***Database***" 4D Write menu and select the **Address** field from the Company table. Add a carriage return.

15. Select "*Insert field...*" item from the "***Database***" 4D Write menu and select the **Co HQ City** field from the Company table. Type a "," after the **HQ City**.

16. Select "*Insert field...*" item from the "***Database***" 4D Write menu and select the **Co HQ State** field from the **Company** table. Type a <space>.

17. Select "*Insert field...*" item from the "***Database***" 4D Write menu and select the **Zip** field from the **Company** table. Add two carriage returns.

18. Type "`Subject: NASA Contract`" on the third line after **«[Company]Co HQ City», «[Company]Co HQ State» «[Company]Zip»**.

19. Select "*Insert field...*" item from the "***Database***" 4D Write menu and select the Contract Number field from the Contract_Grant table. Type a`,` after the **«[Contract_Grant]Contract Number»**.

20. Select "*Insert field...*" item from the "***Database***" 4D Write menu and select the **Title** from the **Contract_Grant** table. Add two carriage returns.

21. Click to the left of the word "Subject". Adjust the left hand margin of the paragraph for all lines past the first by moving the left hand margin to position 1-5/8".

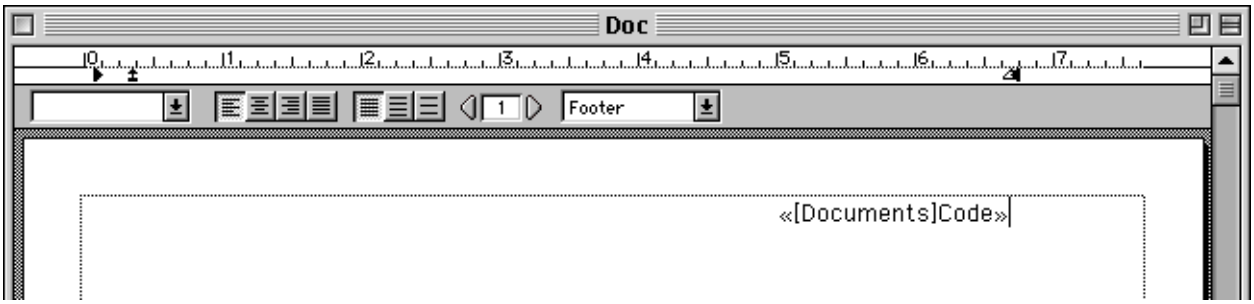
    Note: The left hand margin is represented by a triangle.

22. Type in the following text on the third line after the subject:

    ```
    Per the clause in your contract, please forward an interim
    report to the Technology Transfer Office.
    ```

23. If the paragraph just entered is not left justified then move the left margin to 7/8".

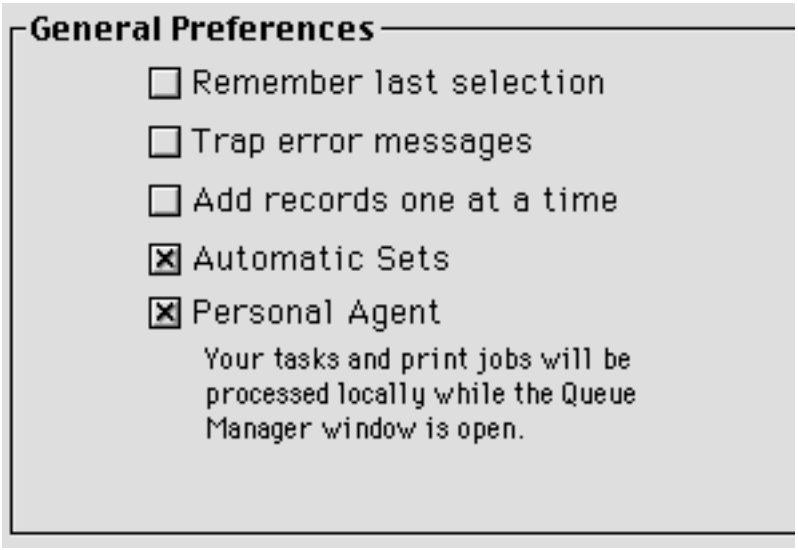
Tutorial #3: Adding a Footer to Your Document



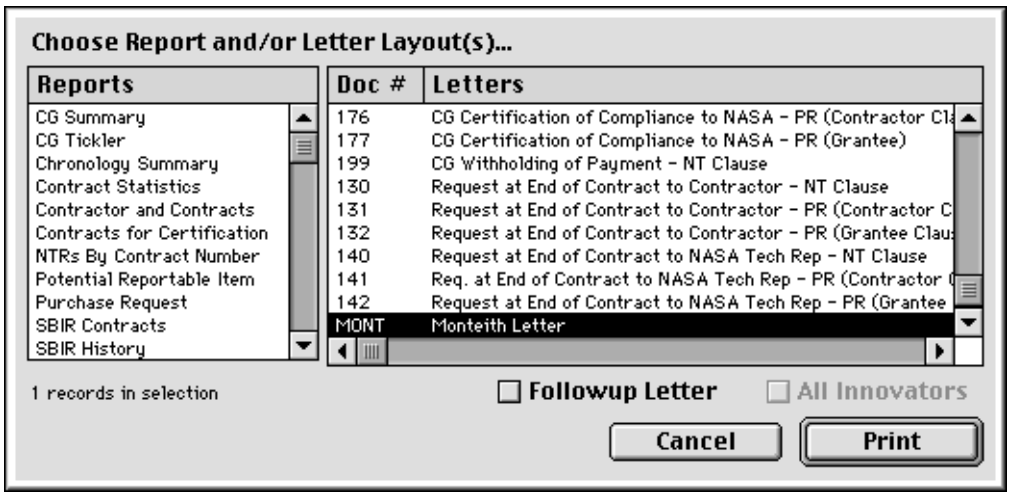
1. Select "*View Footer*" item from the "***Format***" 4D Write menu.
2. Adjust the right margin to 6-3/4".
3. Create a right tab at position just to the left of 6-3/4".
4. Press the tab key once.
5. Select "*Insert Field*" item from the "***Database***" 4D Write menu.
6. Choose the **Documents** table and locate and click on the field **Code**.
7. Click **OK**.
8. Select "*Show Values*" item from the "***Database***" menu.
9. Select "*Show References*" item from the "***Database***" menu.
10. Select "*View Document*" item from the "***Format***" 4D Write menu.
11. Select "*Save*" item from the "***File***" menu.
12. Click the **Accept** button.

Tutorial #4: Printing

1. Select "*Preferences...*" from the "***File***" menu.
2. Check the **Personal Agent** check box.



3. Click **OK**.
4. Select **Contract_Grant** table from the Data Control Panel.
5. Click **OK**.
6. Select "*Show All*" item from the "***Select***" menu.
7. Double-click on the record in the selection that matches your center number (ie KSC is 10) which is used as a prefix for contracts and grants. If there are more than one computer being used by a center, then multiply you center number by 2 and double-click on that record in the selection.
8. Click on the **Print** button icon on the left-side of the data input screen.
9. Locate your letter in the right hand list and click the **Print** button.



10. Select "*Queue Manager...*" item from the "***Report***" menu.

11. Click **OK** to page setup dialog.

12. Click **OK** to print dialog.

13. Close the Queue Manager window.

Label Editor

Getting Started
Components of the Label Editor
Creating a label
Specifying the Label Layout
Creating labels for envelopes
Tutorials

Overview

4th Dimension's Label editor provides a convenient way to print a wide variety of labels. With the Label editor, the following can be accomplished:

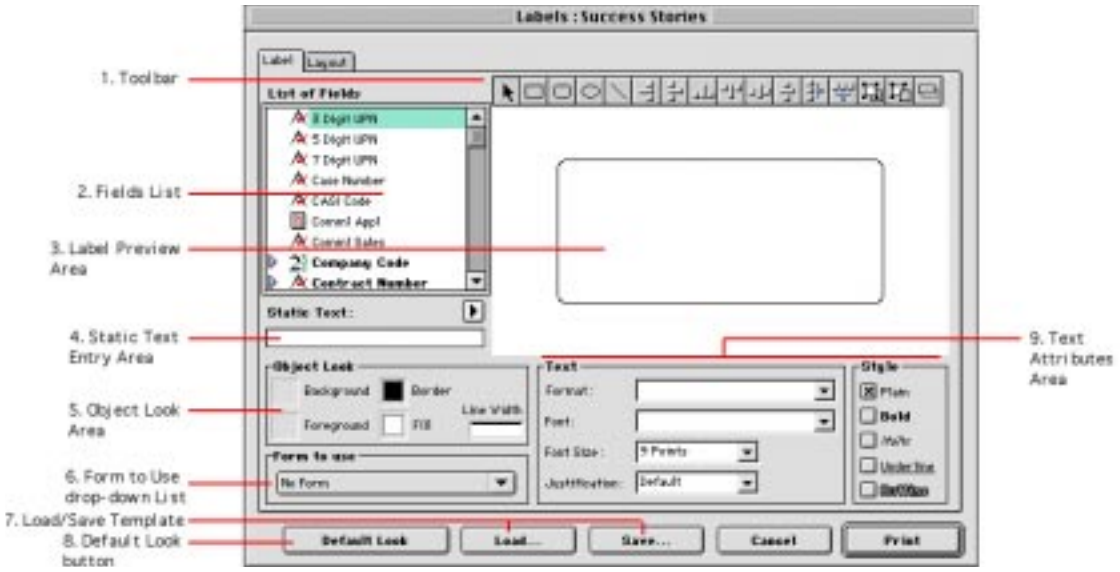
- Design labels for mailings, file folders and file cards, and for many other needs.
- Specify the font, font size, and style to be used for the labels.
- Specify the number of labels across and down on each page.
- Specify the label page margins.
- Load and save label designs.
- Print labels.

Getting Started

1. Select the file from which data will be used to print labels. (e.g. [Company]).
2. Select the records to be used.
3. Select "*Labels*" from the "***Report***" menu, or type `Command-J`.
4. The label editor dialog window will be displayed.

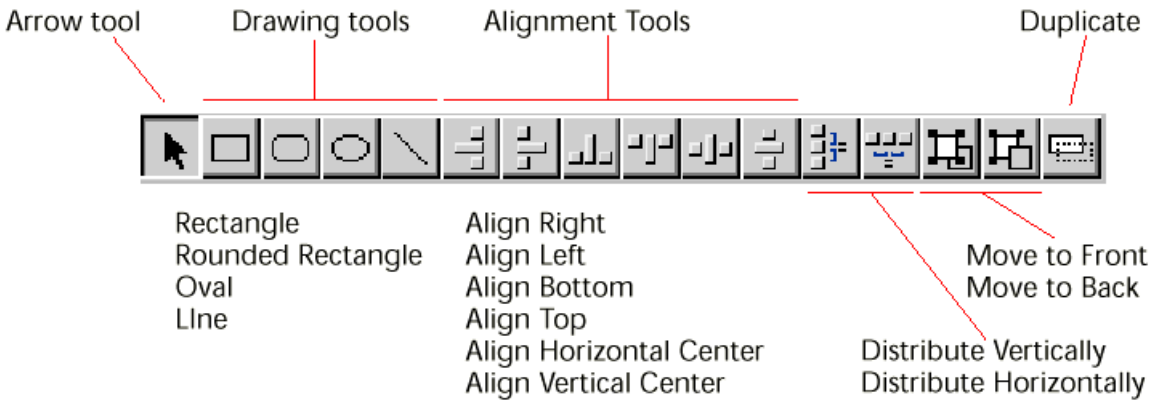
Components of the Label Editor

Label Tab



The Label page of the Label Wizard contains settings for designing and formatting labels. The Label page contains the following elements (numbering corresponds to the numbering in the above figure):

1. **Toolbar:**
   The Label Wizard toolbar contains tools for drawing, selecting, aligning, distributing, and duplicating objects.



2. **Fields list:**
   This area displays the names of the fields in the current table in a hierarchical list. If this table is related to other tables, the relating fields have a plus sign (on Windows) or an arrow (on Macintosh). Fields from the related table can be displayed by expanding the related fields. The fields in the related table are indented.

Note: Only tables and fields that are visible appear in the Label Wizard. For information about making tables and fields invisible, refer to the 4th Dimension Design Reference.

---

3. **Label preview area:**
   Use this area to design the label.

4. **Static Text entry area:**
   Add static text objects to the label.

5. **Object Look area:**
   These controls specify foreground and background colors, fill patterns, and borders for individual objects on the label.

6. **Use Form Pop-Up list:**
   Bypass the Label Wizard and use a form to print the labels. If using the Label Wizard to create the label, select “No Form” (the default) from this list. Using the Label Wizard to create a form, choose it from this list. 4th Dimension will then ignore any other label specifications in the Label Wizard and print the labels according to the design or the specified form. As with any print job, it executes any form or object methods associated with the form.

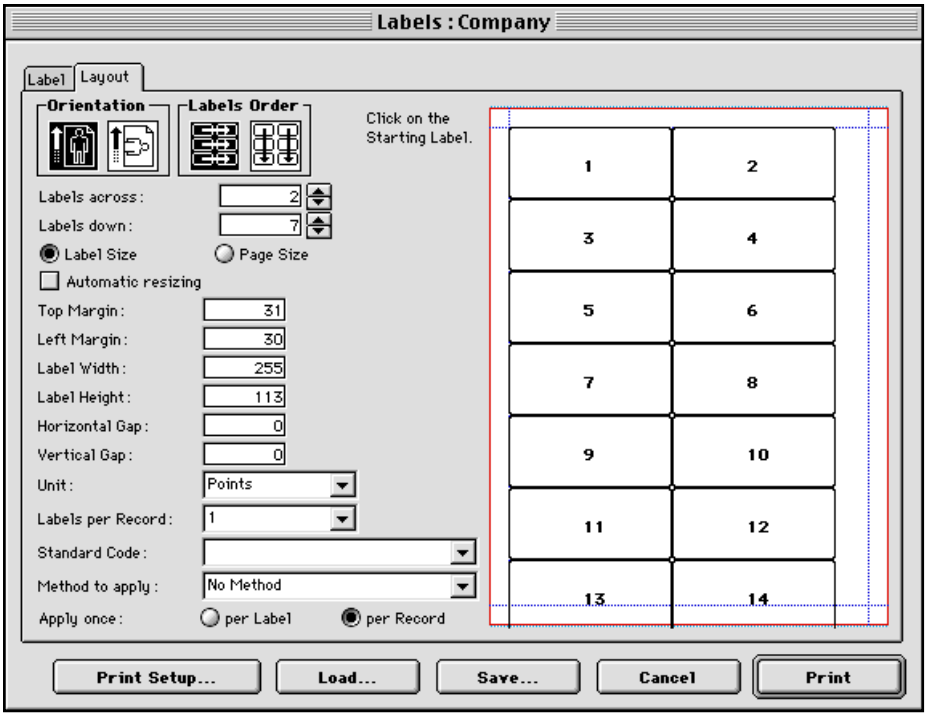
7. **Load/Save Template:**
   These two buttons allow the user to save a label created as a template and re-use it later. The **Load** button allows the user to reload the template when needed.

8. **Default Look button:**
   This button applies the default set of “Object Look” attributes to the selected object.

9. **Text attributes areas:**
   These controls allow the specification of the font, font size, display format, and style of the text.

Layout Tab

The Layout tab contains controls for printing labels based on the requirements of the printer selected in the Print Manager (Chooser on Macintosh), so that the page can be formatted accurately.



- **Orientation and Labels Order buttons:**
  These buttons enable the user to specify the page orientation and the order in which information is assigned to labels. These boxes are used to control the size of labels by specifying the number of labels that appear on your label paper.

- **Layout preview area:**
  This area provides a reduced view of how an entire page of labels will look, based on the dimensions entered in the Label Wizard. The page preview also reflects the paper size selected in the Print Setup dialog box. The first label on the page can also be selected for printing. The red border indicates the size of the physical page and the blue border indicates the size of the printable area.

- **Label size and page size radio buttons:**
  These buttons are used to select the label or the page for setting label and page dimensions. If **Label Size** is clicked, the label width and label height can be entered in the appropriate areas. If **Page Size** is clicked, values for right margin and bottom margin can be entered.

- **Margin boxes:**
  These boxes are used to specify the dimensions of the label and the page size, depending on the radio button selected. After the margins of the label paper have been entered, some additional adjustments may be needed so that the label text is centered in the labels. Both positive and negative numbers in the Margin boxes can be used to increase and decrease the margins.

- **Automatic Resizing:**
  If “Automatic Resizing” is checked, the values in the Label Width and Label Height entry areas are set automatically.

- **Horizontal gap:**
  This area controls the amount of space between label columns.

- **Vertical gap:**
  This area controls the amount of space between label rows.

- **Unit Pop-Up list:**
  This Pop-Up list allows the user to change the units in which the label and label page measurements are specified. Pixels, millimeters, centimeters, or inches can be used.

- **Labels per record Pop-Up list:**
  This control can print more than one copy of each label. If more than one copy is printed, 4th Dimension prints the copies consecutively rather than making copies of the label pages.

- **Standard code Pop-Up list:**
  This control specifies the label, page dimensions, and margins by choosing a standard commercial label paper from the Pop-Up list.

- **Method to apply:**
  This control selects a method that will be run at print time. For example, a method can be executed that posts the date and time that each label was printed.

- **Apply method once radio buttons:**
  These radio buttons are used to specify whether to run the method once per label or once per record. This control has meaning only if printing more than one copy of each label and executing a method at print time.

- **File buttons:**
  These buttons provide options for page setup, printing, saving, and loading label design.

Creating a Label

When records have been selected, a template can be prepared in order to print labels.

1. Drag the first field to display in the label from the Fields list to the Label Preview area. If the field is in a related table, expand the relating field to display the fields in the related table. The field is added to the Label Preview area. Selection handles indicate that it is selected.

2. To concatenate a field to this field, drag the new field from the Field list to the existing field. Otherwise, continue dragging fields to the Label Preview area. As fields are added, they can be repositioned by dragging or using the alignment tools in the toolbar.

3. To add a text element to the label, enter the text in the Static Text area and click the arrow. The static text object is added to the Label Preview area. After adding the element to the label, it can be repositioned by dragging and aligning it with other objects.

4. (Optional) Using a drawing tool, draw any graphic objects to add to the label. For example, different backgrounds to the “TO:” and “FROM:” sections of the label can be added. Paste a graphic from the Clipboard into the Label Preview area.

5. Everything dragged or drawn into the label area is considered an individual object that can be repositioned. All of these objects can be manipulated with the toolbar elements.

6. Click the **Save** button to save the current label setup as a reusable template.

Specifying the Label Layout

1. Click the “Layout Page” tab to display the layout page of the “Label Wizard” . The design of the label paper can be specified using the entry areas on the Layout page or by choosing a standard design from the Standard Code Pop-Up list. This Pop-Up list contains specifications for a wide variety of standard commercial label sheets.

2. Click the **Print Setup** button to display the “Print Setup” dialog box for the operating system.

3. Choose the desired printer and click the **OK** button. If necessary, the Label Preview area changes to reflect the selection.

4. If appropriate, choose the type of label paper to be used from the Standard Code Pop-Up list. The remaining entry area on the page change to reflect the selected label paper’s characteristics. If necessary, these specifications can be modified.

5. Click the appropriate Orientation and Labels Order radio pictures. Choose between portrait and landscape orientation and horizontal or vertical order.

6. Enter the number of labels in each row of the label sheet in the Labels Across box and the number of labels in each column in the Labels Down box. The Label Preview area adjusts to display the appearance of the labels on a printed page.

7. If the first sheet of label paper is partially used, click on the first blank label in the Label Preview area. 4th Dimension will begin printing labels on the label selected.

8. If desired, choose a unit of measurement from the Unit Pop-Up list to use for entering margin sizes.

9. Enter values to reflect the margins on the label paper. Use the **Label Size** and **Page Size** radio buttons to control whether the entry area is used for the size of the label or the size of the page. The size of the individual labels in the label page preview will adjust to accommodate the margins. For example, if the size of the margins is increased by two inches, top and bottom, the size of the individual labels will shrink to maintain the same number of labels that was specified earlier.

10. (Optional) To print more than one copy of each label, use the Labels per Record Pop-Up list to choose the number of copies to print. The copies are printed consecutively on the label paper. 4th Dimension does not duplicate the entire label page.

11. (Optional) If you want to run a method when the labels are printed, choose the method from the Method to Apply drop-down list.

12. (Optional) If executing a method and printing more than one copy of each label, click either the **Once Per Record** or **Once Per Label** radio button in the Apply Once area. This control has no effect unless using both the multiple copies and method features.

Tutorials

Tutorial #1 - Label

1. Double-click on the **People** table from the Data Control Panel.

2. Use the Query editor to locate your **People** record. (Search where Last Name equals your last name).

3. Double-click on the **People** record that was returned from the query.

4. Navigate using the **More** pop-up to Cases & Keywords screen. Add keyword “NASA TechTracS Training”.

5. Click **Accept** button.

6. Use the **Find** query option under **Query** to locate people with the keyword "NASA TechTracS Training."

7. Select “*Labels...*” from the “***Report***” menu.

8. Drag and drop the **[People]First Name** field onto the label preview area.

9. Drag/drop the **[People]MI** field (middle initial) and drop it onto the **[People]First Name** field to concatenate the **[People]First Name** and **[People]MI** fields.

10. Drag/drop the **[People]Last Name** field and drop it onto the **[People]First Name** field to concatenate the **[People]First Name**, **[People]MI** and **[People]Last Name** fields.

11. Locate the **[Company]Name** field. To do this, find the **[Company]Code** field and turn down the triangle to display the fields in the **Company** table. Drag and drop the **Name** field from the **Company** table onto **[People]First Name**, **[People]MI** and **[People]Last Name** fields. Since we really did not want to do this, press the delete key to remove the **[Company]Name**.

12. Locate the **[Company]Name** again and drag/drop below **[People]First Name + [People]MI + [People]Last Name**. Since the field width is probably longer than the default, we need to stretch the **[Company]Name** field. To do this press option+command together and press the right arrow to stretch. Notice that nothing is happening. This is because the focus or tabable area is still at the field list.

13. Another way to tell is that the label preview area has no line around it. Notice that the field list has a double line around it indicating that the field list is the current tabable area.

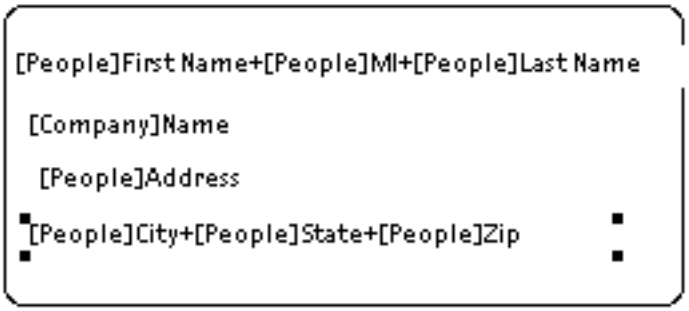
14. Click on the **[Company]Name** field to activate the label preview area. Press option+command together and press the right arrow to stretch the **[Company]Name** field. Turn up the **Company** field list.

15. Drag/drop the **[People]Address** field from the **People** table below all other fields.Since the field width is probably longer than the default, we need to stretch the **[People]Address** field.

16. Drag/drop the **[People]City** field below all other fields.

17. Drag/drop **[People]State** field onto the **[People]City** field to concatenate **[People]City** and **[People]State**.

18. Drag/drop **[People]Zip** field onto the **[People]City** field to concatenate **[People]City**, **[People]State** and **[People]Zip**.



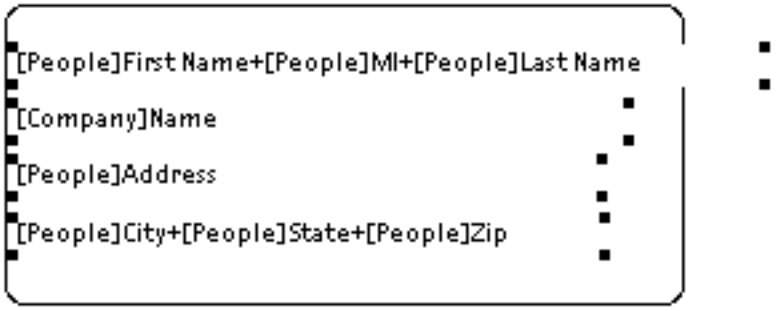
19. Click on the **Save...** button and type "EnvelopeLabel" as the filename.

    TIP: It is always a good idea to periodically save your work.

20. Select all the fields by holding down the shift key and clicking on all the fields.

21. Align all the fields vertically using the **Vertical** Tool.

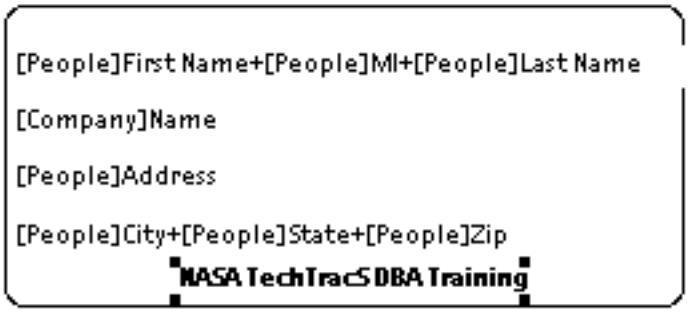
22. Create equal spacing vertically using the **Distribute Vertically** tool.



23. Click on the **Save...** button.

24. Type "NASA TechTracS DBA Training" in the text **Static Text** box and click on triangle to move the static text onto the label template. Position the text in the bottom center of the template.

Click on the **Style Bold** check box.



Topics Covered: **Align, Adding Field References, Save**

Tutorial #2: Layout

1. Click on **Print Setup** button.

2. Click **OK**.

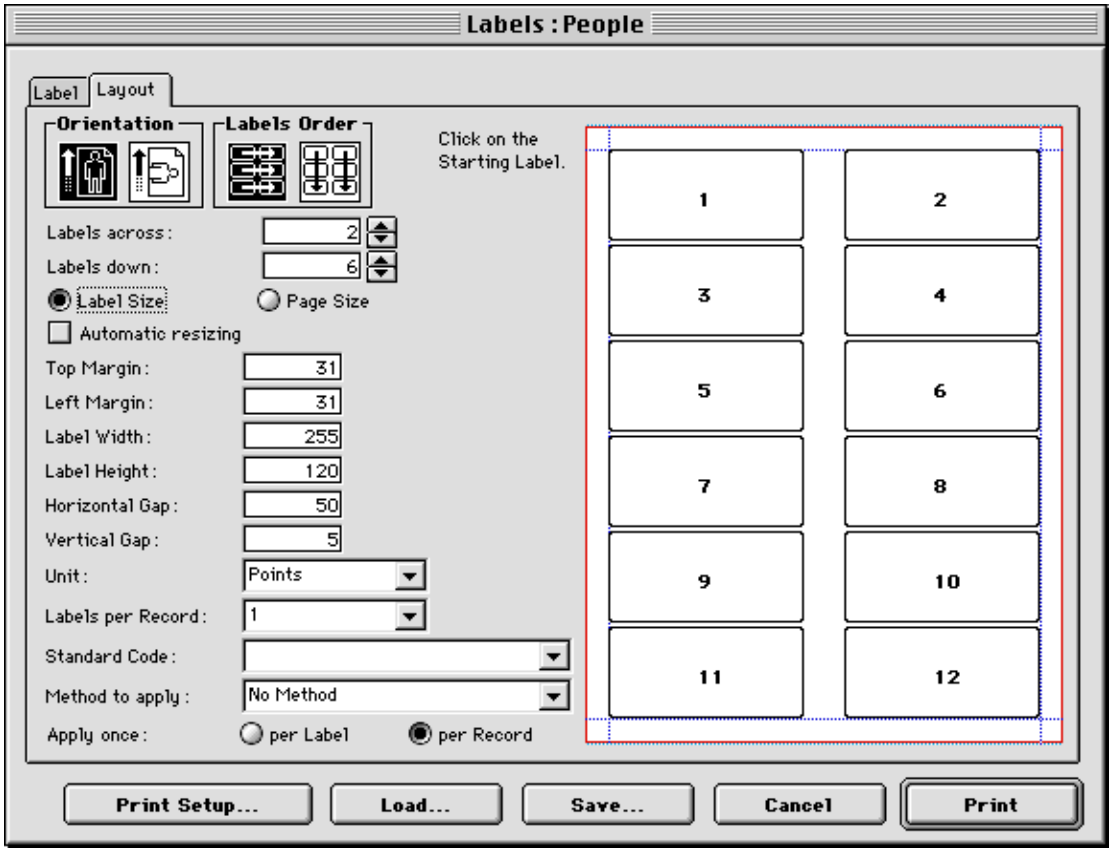
3. Set **Labels down:** to 6.

4. Set **Left Margin:** to 31.

5. Set **Label Height:** to 120.

6. Set **Horizontal Gap:** to 50.

7. Set **Vertical Gap:** to 5.



8. Click the **Save...** button.

9. Click on label number 6 to indicate that the first page will start at label position 5.

10. Click **Print** button.

11. Click **Print**.

12. Click **Cancel** button.

Topics Covered: **Layout, Print, Print Setup**

NASA TechTracS Expressions

Overview

NASA TechTracS expressions are designed to return information that cannot be easily found under a specific format or from a specific table. They have been developed for NASA TechTracS by the developer to respond to specific end-user needs. They are intended to be used with the Quick Report editor and 4D Write. It is strongly recommended to master those two tools before using these expressions. Please refer to the 4D Write and Quick Report sections in this manual.

A description of all the available NASA TechTracS expressions can be found in Appendix E. The table lists the name of the expression, with which table it is to be used, and a description of the information it returns.

In 4D Write, the expressions are inserted by selecting the Insert "*4D Expression...*" item from the "***Database***" menu. Refer to the 4D Write Section.

In the Quick Report editor, the expressions are inserted by adding a new column and entering the expression in the formula editor window that appears. Refer to the Quick Report Section.

Note:*For a table of TechTracS Expressions see* **Appendix E**

Tutorials

Tutorial #1 - NASA TechTracS Expressions in a Quick Report

1. Select **Technology** table from the Data Control Panel.

2. Click the **OK** button from the Data Control Panel.

3. Select **Query Editor** from the pop-up query icon (magnifying glass symbol) on the bottom of the screen.

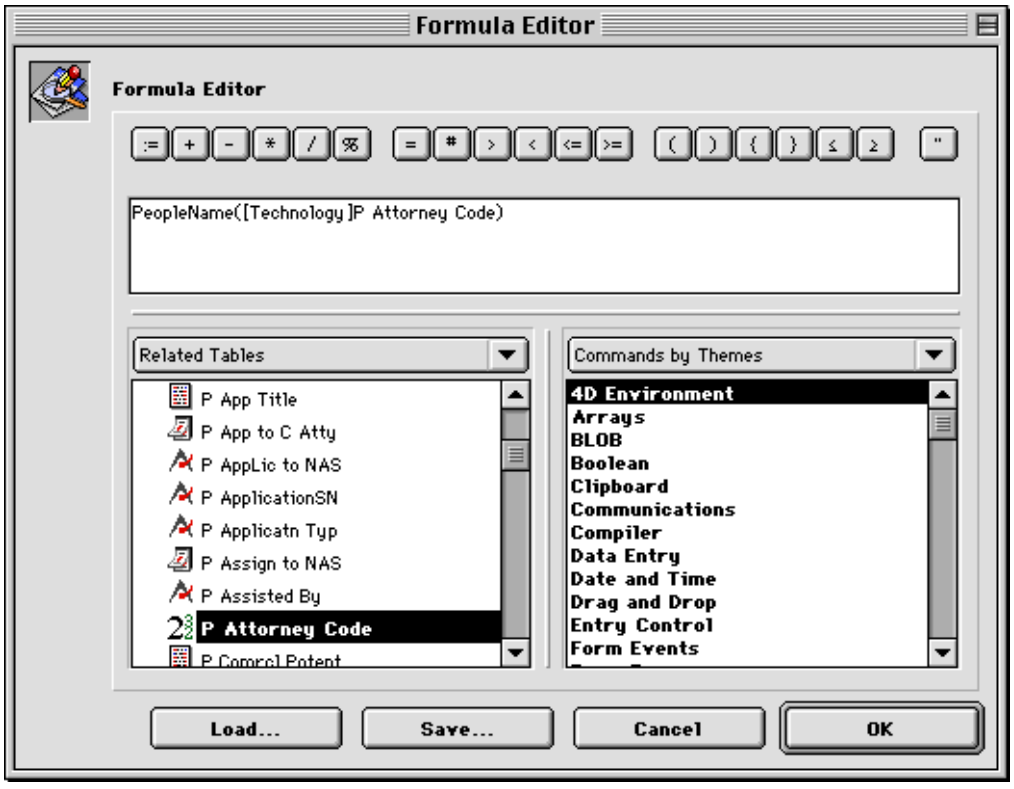
4. Click the **Load...** button to open previously saved query "**TechQuery1.4qf**" and click on **Query** button.

5. Select "*Quick Report...*" item from the "***Report***" menu.

6. Select "*Open...*" item from the "***File***" menu and select **TechReport1.4qr**.

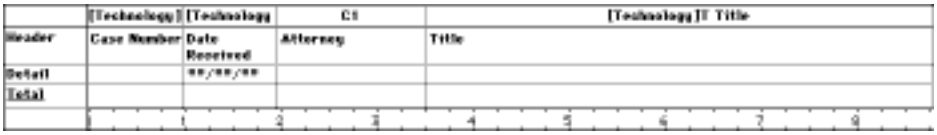
7. Click on the **[Technology]T Title** column.

8. Select "*Insert Column*" item from the "***Edit***" menu.



9. Type "`PeopleName(`".

10. Locate the **[Technology]P Attorney Code** field and double-click on it.
11. Type "`)`".
12. Click **OK**.
13. Select "*Bold*" item from "***Style***" menu.
14. Uncheck **Automatic Width**. Resize column C1 to be 1-1/2 inches.
15. Type "`Attorney`" in the header cell for C1.



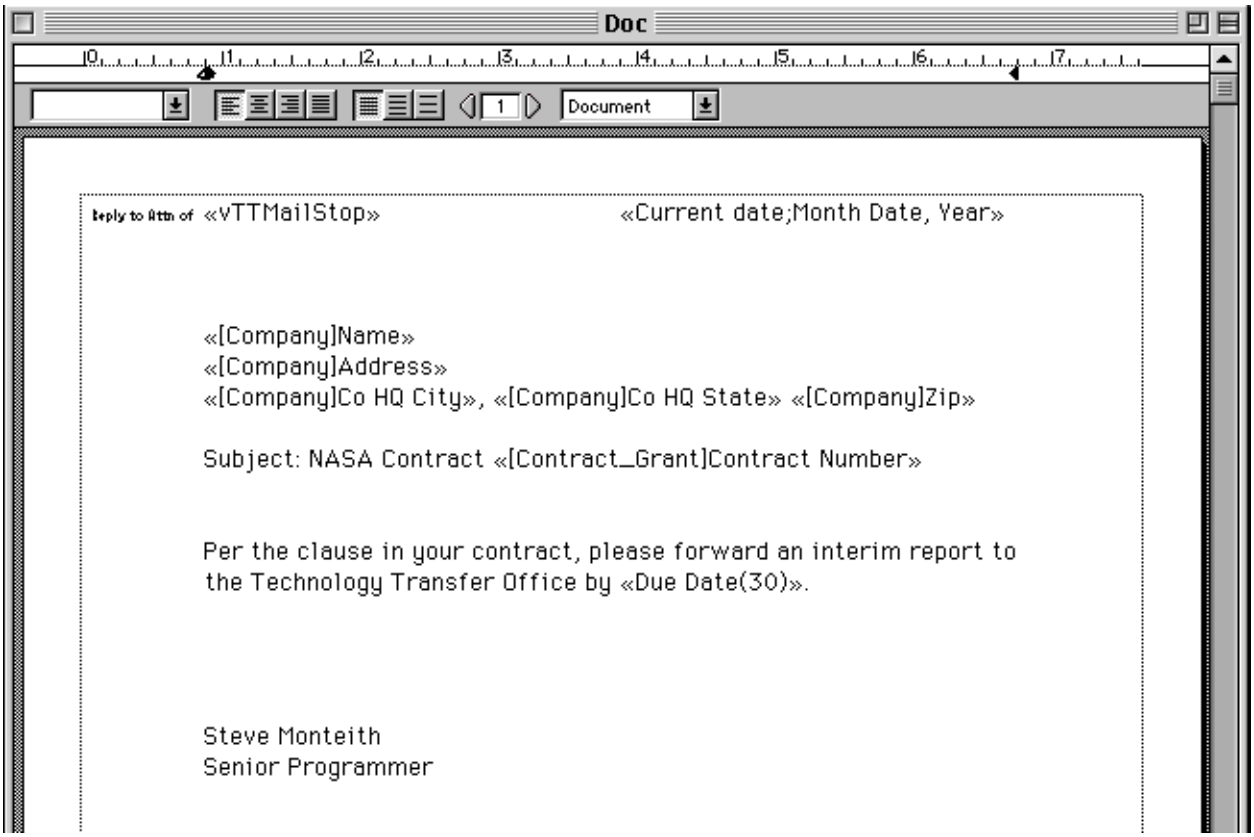
16. Select "*Print Preview...*" item from the "***File***" menu.
17. Click the **Stop** button.
18. Select "*Save as*" item from the "***File***" menu and type `TechReport4.4qr` as the filename.

Tutorial #2: NASA TechTracS Expressions in a 4D Write Document

1. From the Data Contol Panel, select the **Documents** table.
2. Enter your letter document **Code** in the Quick Find box.
3. Click **OK**.
4. Zoom the window by selecting "*Go to full window*" item from the "***File***" menu.
5. Double-click on the mail stop text.
6. Select "*Insert 4D Expression...*" from the "***Database***" menu.
7. Type "vTTMailStop" and click **OK**.
8. Replace "...Technology Transfer Office." replace with "...Technology Transfer Office by ." in the main paragraph.
9. Click to the left of the period of the main paragrapgh.

10. Select ***"Insert 4D Expression..."*** from the ***"Database"*** menu.

11. Type "Due Date(30)" and click **OK**.



12. Select "*Show Values*" item from the "***Database***" menu.

13. Click **Accept** button.

QRList

Generic Quick Report Formula

Getting Started
Precautions to Consider
Tutorials

Overview

The QRList Formula is used when information from a related Table is needed in a Quick Report (See Quick Reports). For instance, if the user would like a list of keywords associated with a selection of Technology records.

Parameters:

1 = »table to search
2 = »field to search
3 = »search value
4 = »field to return
5 = **True:** Perform search, **False:** Use existing selection
6 = delimiter to use
7 = string format (eg: "$###,##0.00")

Returns: text

Description:

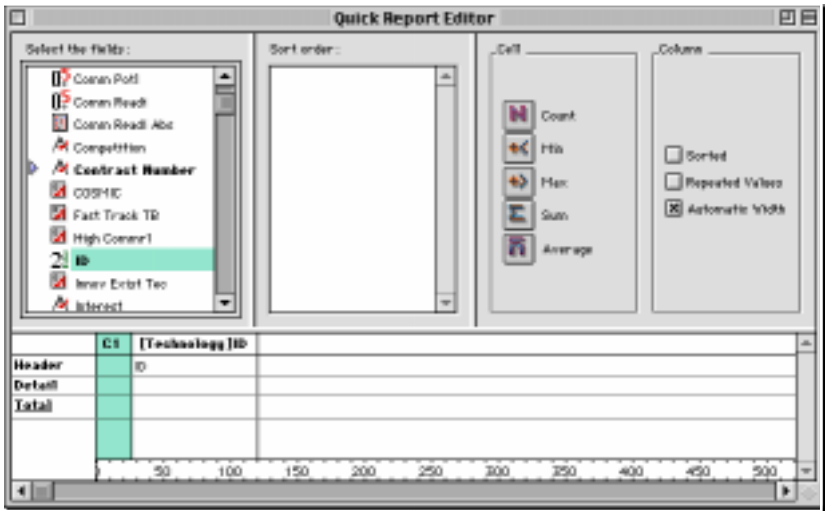
Generic function to search a specified table and return an accumulated delimited text block of a specified field.

Note: To access the pointer character (») on the Macintosh or PC, press - and then > (->).

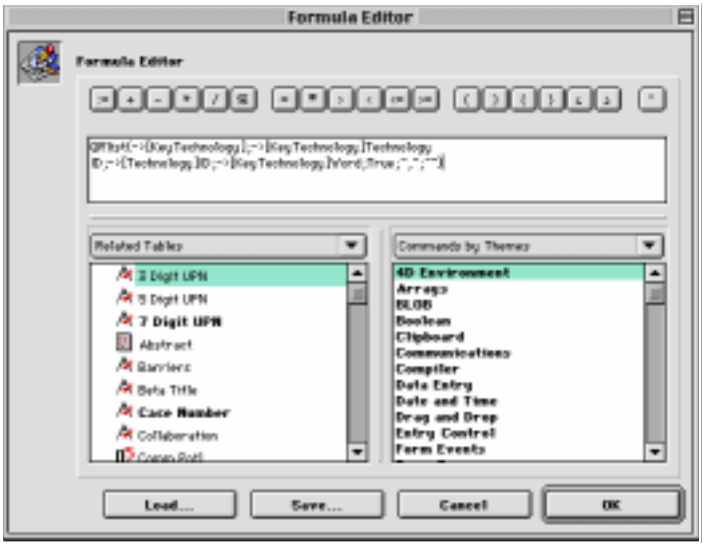
Getting Started

To access the QRList formula, create a selection of records in a table ([Technology] for example). Select "*Quick Report*" from the "***Report***" menu.

A call to QRList may be placed in a formula of an inserted column on a Quick Report. To insert a column, an existing column needs to be created ([Technology]ID for example). Select "*Insert Column*" from the "***Edit***" menu.



When the column is inserted, the Formula Editor Screen is displayed. Enter the QRList formula with the appropriate options. The function will generate a block of text from records in a table.



For example, this formula:

```
QRlist(»[KeyTechnology]; »[KeyTechnology]Technology ID;
»[Technology]ID; »[KeyTechnology]Word; True; ", " ;"")
```

When placed in a column of a Quick Report on the [Technology] table will generate a paragraph of text consisting of keywords (separated by commas) from [KeyTechnology] records whose [Technology] ID field matches each [Technology] record.

Another example, this formula:

```
QRlist(»[Contract_Grant]; »[Contract_Grant]Company Code;
»[Company]Company Code;»[Contract_Grant]Contract Number;
True; Char(13); "")
```

When placed in a column of a Quick Report on the [Company] table will generate a column of text consisting of Contract numbers (separated by CR's) from [Contract_Grant] records whose [Company] Code field matches each [Company] record.

A further example, this formula:

```
QRlist(»[Contract_Grant]; »[Contract_Grant]Company Code;
»[Company]Company Code;»[Contract_Grant]Contract Amount;
False; Char(13); "$###,###,###,##0")
```

When placed in a column of a Quick Report on the [Company] table, following a column containing the previous formula, will generate a column of text consisting of Contract amount (separated by CR's) from an existing selection of [Contract_Grant] records. The contract amounts will be formatted as a dollar amount without decimal places. Note that the "False" value of parameter 5 stops the function from searching the [Contract_Grant] table again. It uses the existing selection of [Contract_Grant] records (which was established by a formula in a previous column).

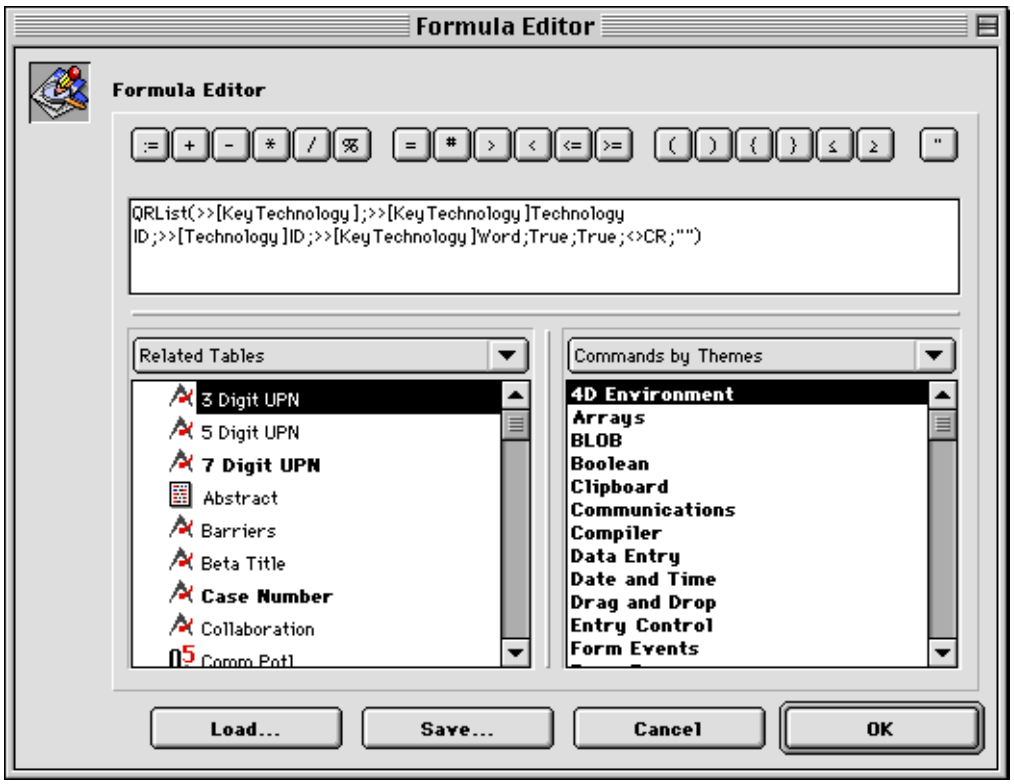
Precautions to Consider

The Formula Editor can be used to change field values in a selection of records, execute 4D methods, execute 4D commands. Misuse of this feature can result in destruction of data. Try to limit use of the Formula Editor to QRList functions and simple value comparisons. Technical support is also available to assist with operations in the Formula Editor.

Tutorials

Tutorial #1 - QRList

1. Select **Technology** table from the Data Control Panel.
2. Click the **OK** button from the Data Control Panel.
3. Select **Query Editor** from the pop-up query icon (magnifying glass symbol) on the bottom of the screen.
4. Click the **Load...** button to open previously saved query "**TechQuery1.4qf**" and click on **Query** button.
5. Select "*Quick Report...*" item from the "***Report***" menu.
6. Select "*Open...*" item from the "***File***" menu and select **TechReport1.4qr**.
7. Select "*Insert Column*" item from the "***Edit***" menu.
8. Type "`QRList(>>[KeyTechnology];>>[KeyTechnology]TechnologyID;>>[Technology]ID;>>[KeyTechnology]Word;True;<>CR;"")`" in the formula area.

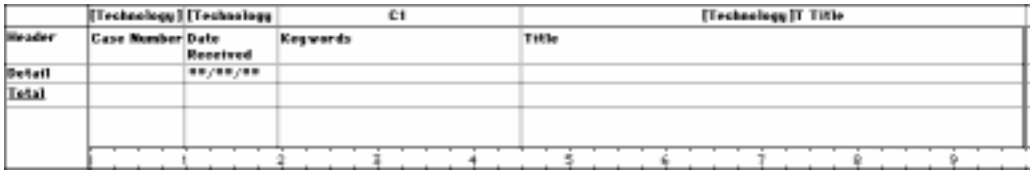


9. Click **OK**.

10. Select "*Bold*" item from "***Style***" menu.

11. Uncheck **Automatic Width**. Resize column C1 to be 1-1/2 inches.

12. Type "`Keywords"` in the header cell for C1.



13. Select "*Print Preview...*" item from the "***File***" menu.

14. Click the **Stop** button.

15. Select "*Save as*" item from the "***File***" menu and type `TechReport5.4qr` as the filename.

Topics Covered: **QRList**

Exports of Data

File Format
Step by Step
Precautions to Consider
Tutorials

Overview

The 4D exporting capability is a fast and reliable way to transfer data for use in other software applications. A user must be in DBA group of the password system in order to access this capability.

File Format

Data can be exported in two formats; “Text” and “4D”.

4D: This format is strictly reserved to 4D users that will import exported data into another 4D database.

Text: This format separates fields within a record by the end-of-field delimiter and records by the end-of-record delimiter. The default field and record delimiters are the **Tab** and the **Carriage Return**, respectively.

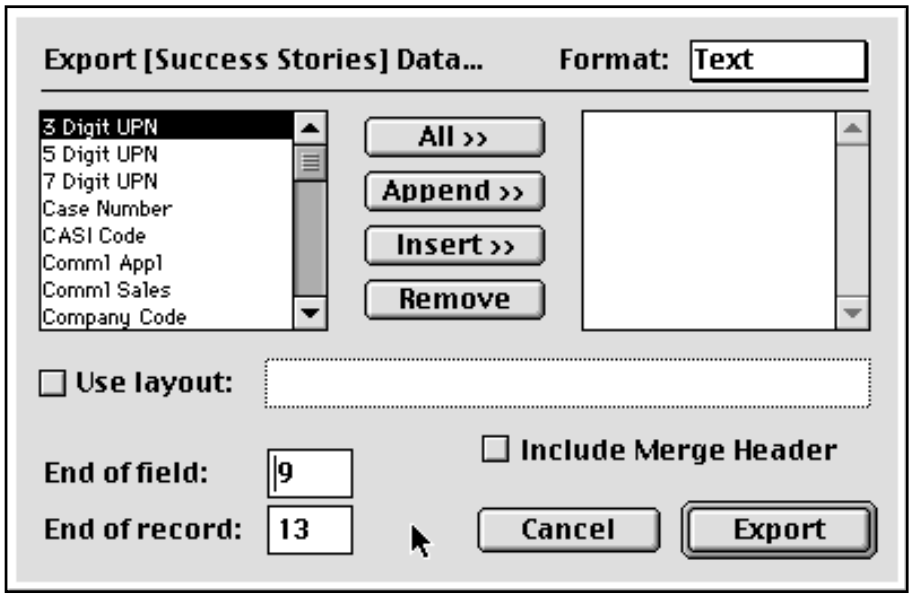
Step by Step.

1. Select the table from which to export records.

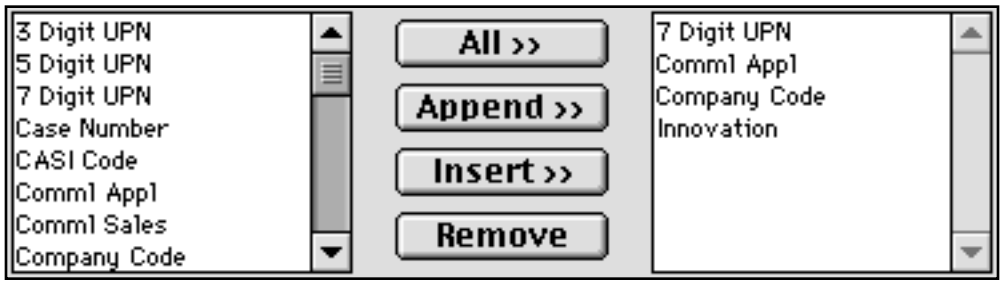
2. In the List window create a selection of records to export and sort them, if desired.

3. Select “*Export*” from the "***File***" menu.

4. A dialog window is displayed.



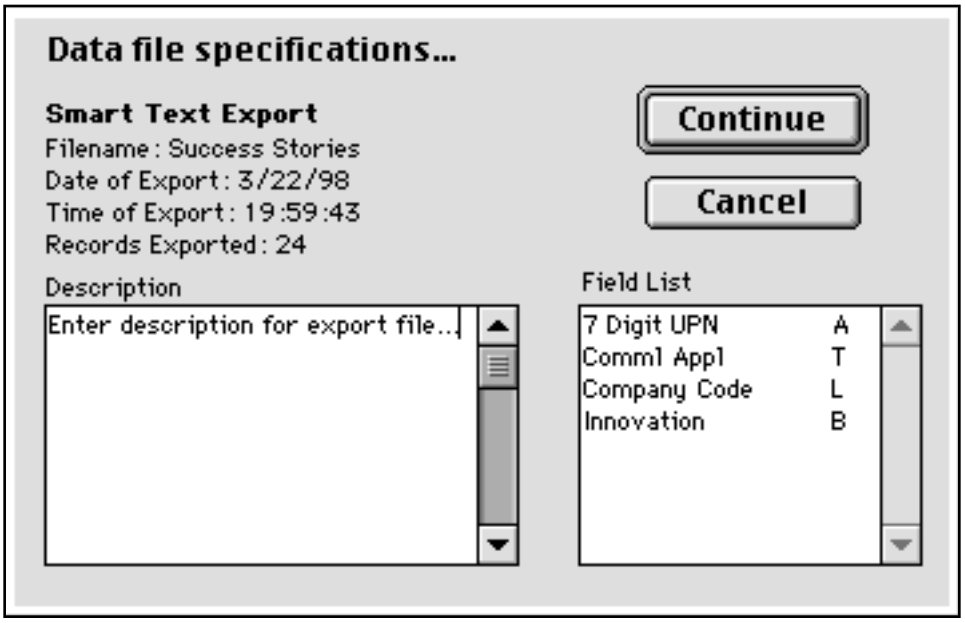
5. A complete list of the fields are available in the left column and the right column presents the ones chosen. Using the list on the left, select the fields to be exported. Use the first three centered buttons to move the selected fields from the left list to the right list. Use the **Remove** button to remove fields from the right list.



6. From the "Format" pull-down menu located in the upper right corner of the window, select which format to use for the export.

7. It is recommended to use the default values (9 and 13) for the "end of field" and "end of record" option. End-of-field delimiters are placed between fields in a record and the end-of-record delimiter is placed after each record. Field and record delimiters are used only when using the Text format. By default, 4th Dimension uses the Tab character (ASCII code 09) as the field delimiter and the Return character (ASCII code 13) as the record delimiter. Most Macintosh and Windows applications also use these characters.The default delimiters can be used when importing or exporting data.

8. Click the **Export** button. A new dialog window entitled "Data file specifications..." will appear. This dialog will give a quick summary the export. If desired, a description can be entered in the description pane. This, and the other information is included at the beginning of the exported file to aid in it's use elsewhere.



10. Click the **Continue** button once, export options are validated as correct.

11. Another dialog window will be displayed to prompt for the file name and location of the export file. Click the **Save** button.

Precautions to Consider

The use of this function is reserved for the database administrator.

It is important to know in advance what will be the final utility of the exported file. The use of duplicate copies are encouraged to prevent any kind of data corruption or loss of the exported file.

If the data to be exported includes a text field, it is important to understand that data from these fields may contain carriage returns. If they do, it may affect the usefulness of the file when it is later used. If there is a possibility of the presence of carriage returns, a different record delimiter should be used (eg. ASCII 10).

Tutorials

Tutorial # 1: Exporting

Create an electronic list of all Technologies reported in the last 12 months, sorted by date received from newest to oldest.

1. Select the **Technology** table from the Data Control Panel.

2. Click on the **Query** button.

3. Click **OK**.

4. Query **Technology** table where the **T Date Received** date is greater than or equal to a date 12 months ago. Since we did this in an earlier tutorial, simply **Load** "TechQuery1.4df".

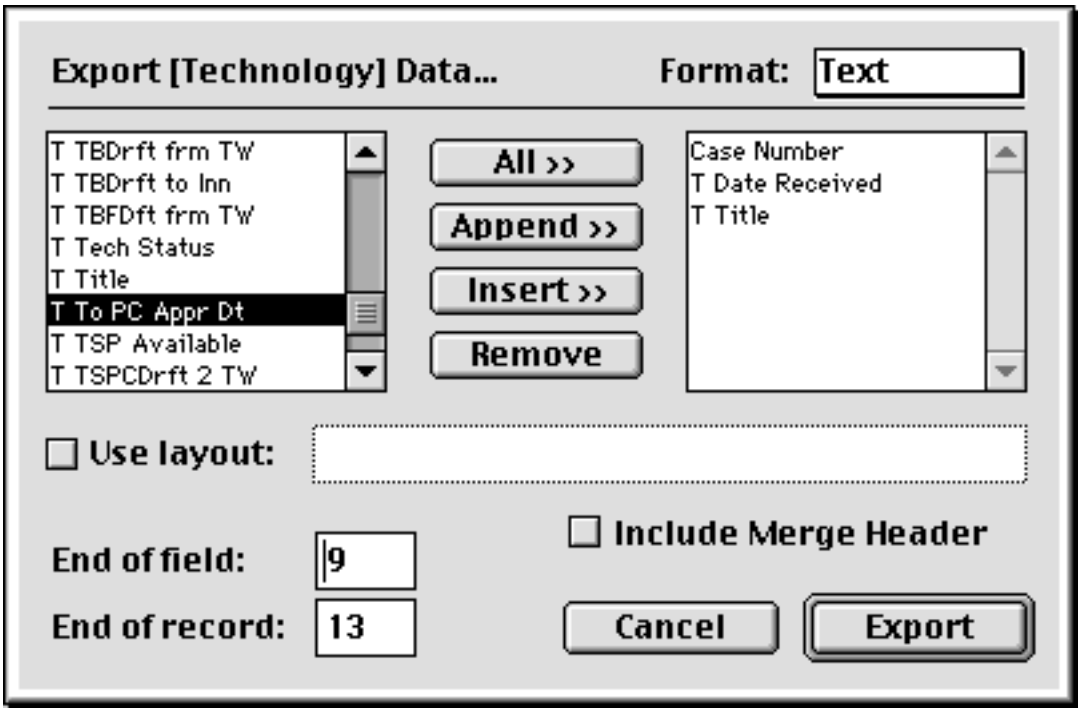
5. Click on the **Order by** Icon at the bottom of the listing screen. Select the **T Date Received** field and reverse the direction of the triangle.

6. Select "*Export...*" item from the "***File***" menu.

7. Locate the **Case Number** and click **Append**.

8. Locate the **T Date Received** and click **Append**.

9. Locate the **T Title** and click **Append**.



10. Click the **Export** button.
11. Click **Continue** button.
12. Enter file name "TechExport."
13. Click **Save**.

Topics Covered: **Exporting, Order By, Query**

Apply Formula

Various Conditions to Observe
Getting Started
Using Apply Formula

Overview

Apply Formula is generally used when a specific field needs to be changed for a selection of records. For instance, a name field needs to be changed from one name to another, or change specific dates for given fields. These actions can be performed from the *Apply Formula* screen. This feature requires cautious use due to it's capability to apply changes to multiple records.

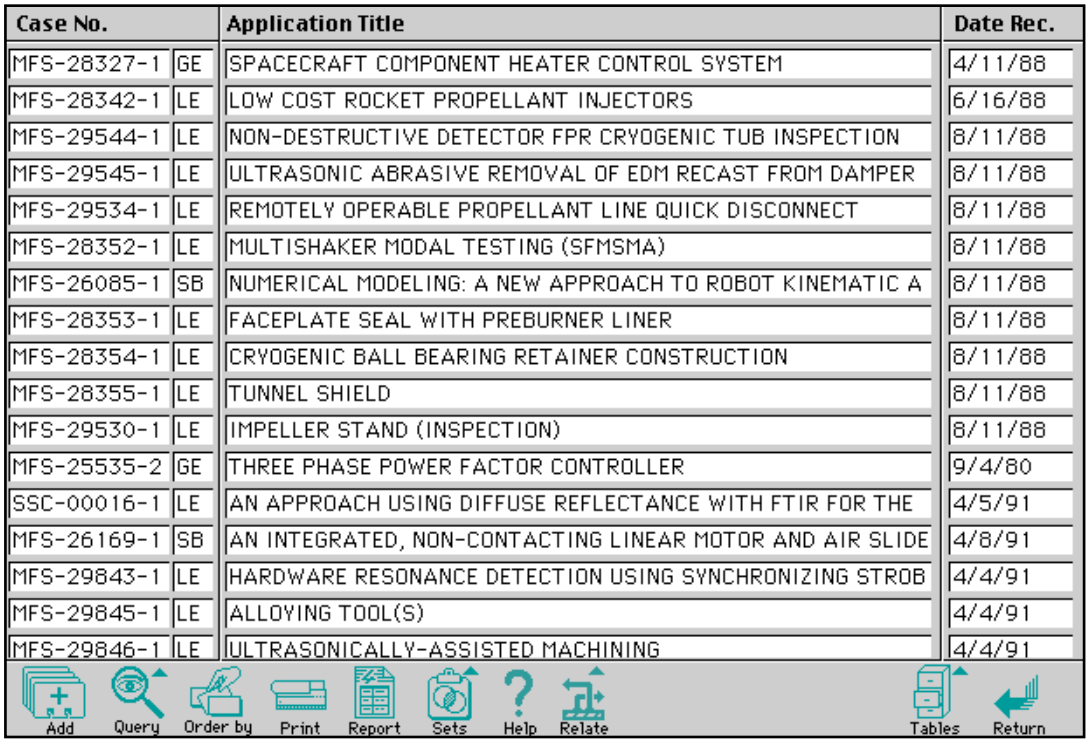
Various Conditions to Observe

- 4th Dimension formulas are not case sensitive. Formulas can be entered in lower case and 4th Dimension will execute the formula without a problem. However, field values are case sensitive.
- Apply Formula is only applied to the current selection of records.
- When a lengthy (time) routine is applied, a progress thermometer is displayed to reflect the routines progress.
- An Apply Formula is ineffective if another user is working on the same record that the apply formula is attempting to modify.

TIP: Use the Apply Formula tool when all other users are off the Server.

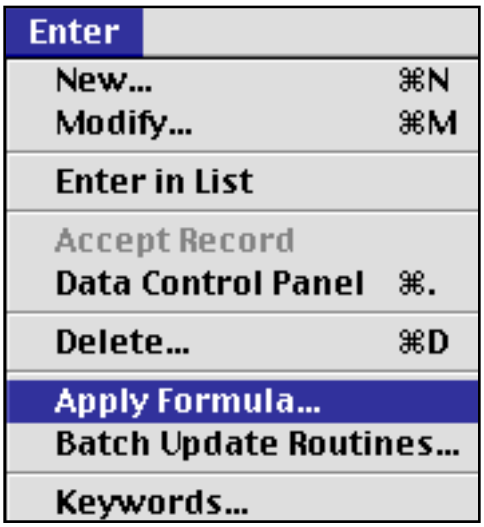
Getting Started

The following screen displayed is called the ***List Screen***. Select the records that need to be modified.



Case No.		Application Title	Date Rec.
MFS-28327-1	GE	SPACECRAFT COMPONENT HEATER CONTROL SYSTEM	4/11/88
MFS-28342-1	LE	LOW COST ROCKET PROPELLANT INJECTORS	6/16/88
MFS-29544-1	LE	NON-DESTRUCTIVE DETECTOR FPR CRYOGENIC TUB INSPECTION	8/11/88
MFS-29545-1	LE	ULTRASONIC ABRASIVE REMOVAL OF EDM RECAST FROM DAMPER	8/11/88
MFS-29534-1	LE	REMOTELY OPERABLE PROPELLANT LINE QUICK DISCONNECT	8/11/88
MFS-28352-1	LE	MULTISHAKER MODAL TESTING (SFMSMA)	8/11/88
MFS-26085-1	SB	NUMERICAL MODELING: A NEW APPROACH TO ROBOT KINEMATIC A	8/11/88
MFS-28353-1	LE	FACEPLATE SEAL WITH PREBURNER LINER	8/11/88
MFS-28354-1	LE	CRYOGENIC BALL BEARING RETAINER CONSTRUCTION	8/11/88
MFS-28355-1	LE	TUNNEL SHIELD	8/11/88
MFS-29530-1	LE	IMPELLER STAND (INSPECTION)	8/11/88
MFS-25535-2	GE	THREE PHASE POWER FACTOR CONTROLLER	9/4/80
SSC-00016-1	LE	AN APPROACH USING DIFFUSE REFLECTANCE WITH FTIR FOR THE	4/5/91
MFS-26169-1	SB	AN INTEGRATED, NON-CONTACTING LINEAR MOTOR AND AIR SLIDE	4/8/91
MFS-29843-1	LE	HARDWARE RESONANCE DETECTION USING SYNCHRONIZING STROB	4/4/91
MFS-29845-1	LE	ALLOYING TOOL(S)	4/4/91
MFS-29846-1	LE	ULTRASONICALLY-ASSISTED MACHINING	4/4/91

Select "*Apply Formula*" from the "***Enter***" menu.



Using Apply Formula

When using Apply Formula, it is important to know the various data or field types for the 4D language. Use the NASA TechTracS Data Dictionary for table and field information. To access the Data Dictionary, select "*Data Dictionary*" from the "***report***" menu.

The following list shows the proper syntax for the appropriate data types.

Syntax

Date

Date fields must begin and end with **!** if they are explicitly declared.
Examples:

- [People]Last Updated:=**!10/05/97!**
- [People]Last Updated:=**Current Date**
- [Contract_Grant]SBI Clause Dat:=[Contract_Grant]**Fnl Rep Dt+60**
  -This example changes the SBI Clause date to the final report date and adds 60 days .

Boolean

Boolean fields determine a **True** or **False** condition.
Examples:

- [People]NASA Employee:=**True**
  -Yes, this is a NASA employee
- [People]NASA Employee:=**False**
  -No, this is not a NASA employee

Text or Alpha

Text or Alpha fields begin and end with **“ ”** if they are explicitly declared.
Examples:

- [People]First Name:= “David”
- [People]Area:= “919”
  -Notice the ( ) are omitted from the area code. These special characters are entered automatically.
- [People]Phone:= “7909895”
  -Notice the - (*separator*) is omitted from the phone number. This special character is also entered automatically.

NOTE: In most cases phone numbers and area codes are text fields. The quotes are necessary.

Longint or Integer

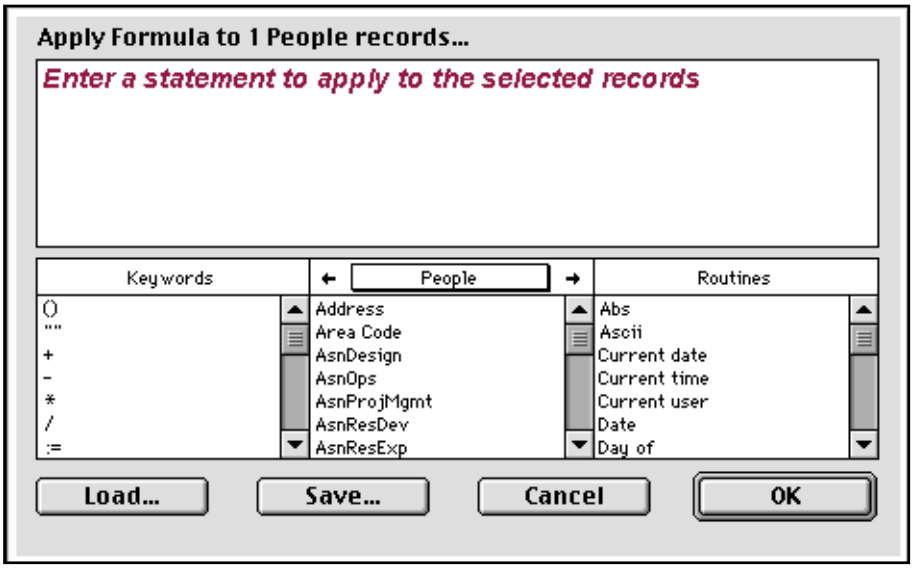
Longint or Integer fields are entered as a number only.
Examples:

- [People]Company Code:=808345

Real

Real fields are fields that carry a decimal place.
Examples:

- [Contract_Grant]Contract Amount:=1,000,000.50



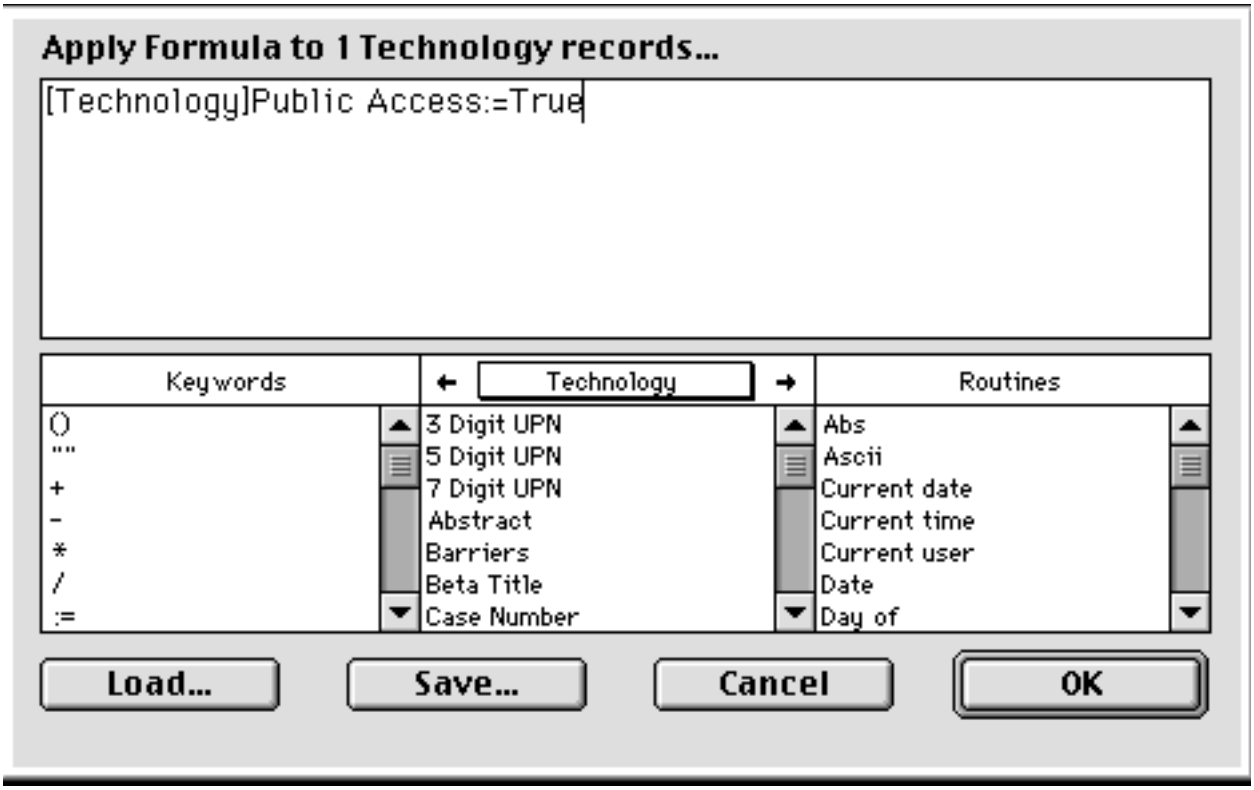
Tutorials

Tutorial # 1: Boolean Field Change

Set Public Access to true for all Technology records with a Final Technology Classification of 1 or 2.

1. Select the **Query** button from the Data Control Panel.
2. Select the **Technology** table.
3. Click **OK**.
4. Locate and click on **T Final Class** field. Select comparison **is equal to** and type in `1`.
5. Click on **Add Line** button. Click on **Or** button.
6. Click on **T Final Class** field. Select comparison **is equal to** and type in "`2″.`
7. Click on **Query** button.
8. Select "*Apply Formula*" item from the "***Enter***" menu.
9. Enter apply formula statement:

```
[Technology]Public Access:=True
```



10. Click **OK**.

Topics covered: **Apply Formula, Query**

Tutorial # 2: Long Integer Field Change

One of your Patent Attorneys took the early out and you wanted to change all the Technology records associated with the retiring attorney to a newly hired attorney. This will save you from having to visit every Technology record associated with the retiring attorney.

Note: First you must add the newly hired Attorney to the People file and designate the people type as "Attorney." You must sign out and sign back in for the change to take effect.

1. Select the add button from the Data Control Panel.

2. Select the **People** table.

3. Click **OK**.

4. Enter the newly hired attorneys information (ie your name). Note the People code in the upper left and corner of the screen. Select "Attorney" as the people type.

5. Click **OK**
.
6. Click once on the **Search** button.

7. Select the **People** table.

8. Click **OK**.

9. Choose **Find** from the search pop-up search options. Choose by **Type**. Choose **Attorney** as the people type and click **Find**.

10. Double-click the first attorney people record. Note the unique number (**People Code**) for the attorney. Click cancel to leave people record.

11. Navigate to the **Technology** table. Query the **Technology** table where the **Attorney Code** is equals the retiring attorney code.

12. Select ***"Apply Formula..."*** item for the ***"Enter"*** menu.

13. Enter apply formula statement:

```
[Technology]Attorney Code:=<new attorney code>
```

14. Click **OK**.

Topics covered: **Apply Formula, Query, Relate**

Tutorial # 3: Date Field Change

Suppose you wanted to start using Form 1546, Form 1661 and Form 1548 that can automatically be printed by NASA TechTracS. To accomplish this, we need to make NASA TechTracS think that all prior information has already been sent to NASA HQ on these forms. This is done by assigning some date to the correct data fields in the Tech Innovator table. We will use the T FinalClass Date to indicate the information has already been forwarded to NASA HQ.

Form 1546- [Tech Innovator]Info to HQ for TB
Form 1661- [Tech Innovator]Info to HQ 1661
Form 1548 - [Tech Innovator]Form 1548 Dt

1. Select the **Query** button from the Data Control Panel.

2. Select the **Technology** table.

3. Click **OK**.

4. Define Query. (T FinalClass Date not equal to 00/00/00)

5. Use **Relate** popup at bottom of listing screen to relate to the **Tech Innovator** table.

6. Select ***"Apply Formula..."*** item from the ***"Enter"*** menu.

7. Enter apply formula statement:

```
[Tech Innovator]Info to HQ for TB:=!01/01/65!
```

8. Click **OK**.

Tutorial # 4: Alpha Field Change

Suppose a COTR field out the Inventory assessment for only one record where the Comrcl Plans field was the same for a number of records. He complained about having to do this for each Inventory record so he emailed a not to pleasant email asking you to do it for him.

1. Select the **Search** button from the Data Control Panel.

2. Select the **Contract_Grant** table.

3. Click **OK**.

4. Define Query. (Contract Number equals NAS10-11400)

5. Use **Relate** popup at bottom of listing screen to relate to the **Inventory** table.

6. Select ***"Apply Formula..."*** item for the ***"Enter"*** menu.

7. Enter apply formula statement:

```
[Inventory]Comrcl Plans:="Applied research to customize
basic industrial engineering technologies in Payload
operations."
```

8. Click **OK**.

.

Appendix A

Lists

List Name:	Action Assign

Values:	`NASA Headquarters`
	`Patent Counsel`
	`Tech Transfer Officer`

Table Used:	Action Item
Field Used:	Assigned By
Characters Stored:	20
Screen Used On:	Action Item, Page 1 (Cosmic Action Item)
Description:	Individual who entered the action item.

List Name:	Action Category

Values:	`01- NTR Process`
	`02- COSMIC`
	`03- Tech Transfer Inquiry`
	`04- Contracts`
	`05- Tech Transfer Misc.`
	`06- SBIR HQ`
	`07- SBIR Inquiry`
	`08- SBIR Miscellaneous`
	`09- General Miscellaneous`
	`10- TQM`
	`11- Training/Conference`
	`12- Patent`
	`13- TechTracS`
	`14- WWW Inquiry`
	`15-Tech Transfer Office`

Table Used:	Action Item
Field Used:	Number
Screen Used On:	Action Item, Page 1
Description:	Number which identifies the type of Action Item.

List Name:	Action From
Values:	NASA Headquarters Patent Counsel Tech Transfer Officer
Table Used:	Action Item
Field Used:	From
Screen Used On:	Action Item Input, Page 1 (Cosmic Action Item)
Description:	Individual who is given the action item. Do not confuse with “by” field who is the individual who is making the action item record for the “from” individual.

List Name:	Action To
Values:	NASA Headquarters Patent Counsel Tech Transfer Officer
Table Used:	Action Item
Field Used:	To Screen Used On:Action Item Input, Page 1 (Cosmic Action Item)
Characters Stored:	25
Description:	Individuals(s) assigned to the action item.

List Name:	Annual Sales
Values:	$1-$5M $15M-$25M $5M-$15M 100k-1M 1k-100k <$1M >$50M
Table Used:	Company
Field Used:	Annual Sales
Characters Stored:	20
Screen Used On:	NASA Leads, Page 1 (NASA Lead)
Description:	The approximate annual sales of the company lead.

List Name:	Application Type
Values:	CIP CON DIV FWC ORD PRV
Table Used:	Technology
Field Used:	P Application Type
Characters Used:	Whole String
Characters Stored:	3
Screen Used On:	Patent View, Technology, Page 1
Description:	Patent application type.

List Name:	Awareness
Values:	Industry Tradeshow NASA Ad/Magazine NASA Tech Brief Tabled Used:NASA Leads
Field Used:	Awareness
Characters Used:	Whole String
Characters Stored:	30
Screen Used On:	NASA Leads, Page 1 (NASA Lead)
Description:	The medium by which the lead became interested in a NASA Technology.

List Name:	CG Pub
Values:	Do Not Pub Hold Publish
Table Used:	Technology
Field Used:	T CG Pub Code
Characters Used:	Whole String
Characters Stored:	2
Screen Used On:	Technology, Page 4
Description:	Contractor publish decision code.
Note:	The DBA should not modify this list.

List Name:	Dev State
Values:	1 - Concept Only 2 - Design 3 - Prototype 4 - Modification 5 - Production Model 6 - Used in Current Work
Table Used:	Technology
Field Used:	T Develop State
Characters Used:	1
Characters Stored:	2
Screen Used:	Technology, Page 2 (Abstract/Keywords)
Description:	The development state of the technology at the time it was reported.

List Name:	Docket Category
Values:	01 - Disclosure 02 - Technical Evaluation 03 - Attorney Evaluation 04 - Further Testing/Devel 05 - Patentability Search 06 - Review of Search and Patentability Evaluation 07 - Inactivated/Abandon 08 - Application Preparation 09 - Application Filed 10 - Amendments/Final Rejection/PTO Action 11 - Interference 12 - Appeal 14 - Foreign Filed 15 - Elected/Waived Cases (Large Entity) - Application Filed 16 - Patents Granted for Technology
Table Used:	Technology
Field Used:	P Docket Category
Characters Used:	2
Characters Stored:	2
Screen Used On:	Patent View, Technology, Page 1
Description:	The current patent docket category.

List Name:	Employees
Values:	1-5 100-500 15-25 25-100 5-15 6-50 <5 >500
Table Used:	Company
Field Used:	Emps Locally
Characters Used:	Whole String
Characters Stored:	10
Screen Used On:	NASA Leads, Page 1
Description:	The approximate number of employees at the lead company.

List Name:	Eval Class
Values:	1 2 3 4
Table Used:	Technology
Field Used:	T 1st Eval Clas T 2nd Eval Clas T Final Class
Characters Used:	1
Characters Stored:	2
Screen Used On:	Technology, Page 3 (Technology Evaluation)
Description:	Final technology evaluation classification.

List Name:	Field Center
Values:	ARC DRC GSC HQN JPL JSC KSC LAR LEW MFS SSC
Table Used:	Success Stories
Field Used:	Space Centers
Characters Used:	Whole String
Characters Stored:	80
Screen Used On:	Success Stories, Page 2
Description	Responsible Field Center where contract is signed. This List is used in numerous places throughout NASA TechTracS.

List Name:	Job Function
Values:	Consulting manufacturing R&D Services Test/Evaluation
Table Used:	People
Field Used:	Job Function
Characters Used:	Whole String
Characters Stored:	20
Screen Used On:	NASA Leads, Page 1
Description:	The general classification of the type of business the lead company does the majority of their work.

List Name:	Lead Result

Values:	`Partnership`
	`Relationship in Progress`
	`Relationship Terminated`

Table Used:	NASA Leads
Field Used:	Result
Characters Used:	Whole String
Characters Stored:	25
Screen Used On:	NASA Leads, Page 1
Description:	The status of a possible partnership with a lead company after contact by a NASA representative.

List Name:	LeadPartnershipType
Values:	`Joint R&D` `Problem Solving`
Table Used:	NASA Leads
Field Used:	Partnership Type
Characters Used:	Whole String
Characters Stored:	25
Screen Used On:	NASA Leads, Page 1
Description:	The type of partnership initiated with a lead company.

List Name:	Legal Document

Values:	`Cooperative Agreement`
	`JSRA`
	`License`
	`MOU`
	`SAA`
	`TTA`

Table Used:	NASA Leads
Field Used:	Legal Document
Characters Used:	Whole String
Characters Stored:	25
Screen Used On:	NASA Leads, Page 1
Description:	The type of partnership agreement with the lead.

List Name:	LeRC Eval

Values:	`Dick`
	`GLitec`
	`Gynelle`
	`LIFT`
	`Matt`
	`Steve`

Table Used:	LeRC Eval
Field Used:	Evaluator
Characters Used:	1
Characters Stored:	10
Screen Used On:	Technology, Page 3
Description:	The LeRC technology evaluator. This list is only used by LeRC.

List Name:	License Type

Values:	`Exclusive`
	`Nonexclusive`
	`Partially Exclusive`

Table Used:	License
Field Used:	License Type
Characters Used:	1
Characters Stored:	2
Screen Used On:	License, Page 1 (License General Information)
Description:	The type of license agreement between NASA and the Licensee.

List Name:	License Units

Values:	`Dollars`
	`Gallons`
	`Pounds`
	`Products`
	`Square Feet`

Table Used:	License Reports Contents
Field Used:	Units
Screen Used On:	License, Page 5, Add a Report, Add Report Contents, Units
Description:	This list is only appropriate if the Report Code is PP. The number of units of product for a given dollar amount.

List Name:	Partnership Chance
Values:	Excellent Fair Good Poor
Table Used:	NASA Leads
Field Used:	Partnership Chance
Characters Used:	Whole String
Characters Stored:	9
Screen Used On:	NASA Leads, Page 1
Description:	The NASA Point of Contact's opinion of how likely a partnership is with a lead.

List Name:	PeopleType
Values:	Attorney Buyer Co Contract Rep Co New Tech Rep Co Tech Rep PI Contributor Div. TU Rep. Evaluator Innovator Inquirer Inventor License TT POC NASA Cont Ofcr NASA Tech POC NT Preparer Success Contact
Table Used:	xPeopleType
Field Used:	Description
Screen Used On:	People, Page 1 (General Information)
Description:	The category the person in the people record falls into.

List Name:	Priority Type
Values:	P1 P2 P3
Table Used:	Technology
Field Used:	A Priority Type
Characters Used:	Whole String
Characters Stored:	2
Screen Used On:	Technology, Patent View, Page 3 Description: Patent Office technical evaluation priority type. Possible values are “P1” disclosure will be prepared and filed as a patent application, “P2” disclosure currently under evaluation/search, “P3” disclosure will not be filed as a patent application and is inactivated.

List Name:	PT Pub
Values:	A: Invention Owned by NASA - NASA Patent B: Invention Owned by Inventor - Inventor Patent C: Invention Owned by NASA - Patent Pending D: Invention Owned by Inventor - Patent Pending E: Ownership Indefinite or Owned by NASA - Patent Indefinite F: No Patent Action Contemplated by NASA G: (Ga) Waived Inventions - No Patent H: Elect to Retain Title to Invention O: On Hold N: Not to be Published X: (Gb) Waived Inventions - Patented
Table Used:	Technology
Field Used:	Patent Status
Characters Used:	1
Characters Stored:	Text
Screen Used On:	Technology, Page 4
Description:	Indicates the current status in processing on the particular case by the Patent Office. This status is more accurate as opposed to the Docket Category.

List name:	Publication Name
Values:	LASER Tech Brief NASA Tech Brief New List Item SPIE Conference TECH 2000 SERIES
Table Used:	Technology
Field Used:	T TB Title
Characters Used:	Whole String
Characters Stored:	Text
Screen Used On:	Technology, Page 6
Description:	Title of the invention disclosure Technical Brief.

List Name:	Report As
Values:	CU GE LE NP SB
Table Used:	Technology
Field Used:	P ReportAs
Characters Used:	2
Characters Stored:	2
Screen Used On:	Technology, Page 1
Description:	Indicates where the invention disclosure was reported from. “GE” for Government Entity, “LE” for Large Entity, “SE” for Small Entity, “CU” for College/University, or “NP” for Non-Profit.

List Name:	Report Status
Values:	More Info. Required Satisfactory Unsatisfactory
Description:	This list is no longer used.

List Name:	RoyaltyTotalCodes
Values:	AMR - Annual Minimum Royalty IF - Initial Fee OTHER - Other Royalty RR - Running Royalty
Table Used:	License Royalties
Field Used:	Code
Characters Used:	Whole String
Characters Stored:	7
Screen Used On:	License, Page 4
Description:	The type of royalty payment to NASA from the licensee.

List Name:	Staff
Values:	
Table Used:	Action Item
Field Used:	To
Screen Used On:	Action Item, Page 1
Description:	Individuals Assigned to the Action Item.

List Name:	TB Category
Values:	01 - Electronic Components and Circuits 02 - Electronic Systems 03 - Physical Sciences 04 - Materials 05 - Life Sciences 06 - Mechanics 07 - Machinery 08 - Fabrication Technology 09 - Mathematics and Information Sciences
Table Used:	Technology
Field Used:	T TB Category
Characters Used:	2
Characters Stored:	2
Screen Used On:	Technology, Page 6
Description:	Tech Brief Category as listed in the front section of Tech Brief magazine.

List Name:	Tech Eval
Values:	COSMIC LeRC Organization Personal Subcontract
Table Used:	Technology
Field Used:	T Eval Type
Characters Used:	1
Characters Stored:	2
Screen Used On:	Technology, Page 3
Description:	Invention disclosure evaluator type. “P” People, “O” Organization, “L” LeRC Evaluators, or “C” Cosmic.

List Name:	Tech Origin
Values:	Grantt Joint Multiple NASA Prime Subcontract
Table Used:	Technology
Field Used:	Origin
Characters Used:	1
Characters Stored:	2
Screen Used On:	
Description:	The origin of the new technology/innovation. “J” Joint, “P” Prime, “N” NASA, “G” Grant, or “M” Multiple.
Note:	This list should not be edited.

List Name:	TOPS Category
Values:	Communication Environment Instumentation Materials Medical Sensors Software
Table Used:	TOPS Category
Field Used:	Category
Characters Used:	Whole String
Characters Stored:	25
Screen Used On:	TOPS, Page 2 (TOPS Cont’d)
Description:	The general classification of the TOPS technology

Appendix B

Group descriptions for the Password Guide

XYZ -
This group is managed automatically. Ignore this group.

XYZ TTO
Reserved for users working in the Technology Transfer department. Every one in this group is automatically put in the XYZ- group.

XYZ Patent
Reserved for users working in the Patent department. Every one in this group is automatically put in the XYZ- group.

Alt Views TT
Allows users in TTO group to display the Patent views.

Alt Views Pat
Allows users in Patent group to display the TTO views.

DBA
This group is not related to the field center Administrator. It gives the user the ability to export records, and apply formulas.

Delete
Allows users to delete records without any other administrative privileges.

Guest
A guest user is authorized to access the database in Read Only mode. This means no record can be added or modified.

Classified
The users in this group are allowed to see and modify the “Social Security Number" field.

Budget
Ignore this group.

Kiosk
The users in this group are granted access to the special Kiosk interface designed for Touch Screen.

AW Release
This group is allowed to mark a Contract Grant record, a Success Stories record and a Technology record for public access. A Success Stories record can also be marked as "Submit to HQ".

DataDict
Users in this group get the permission to edit data in the Data Dictionary fields and distribute the Data Dictionary from AgencyWide to the field centers.

Agent
This is used for WAN operations. It controls the access to AgencyWide and NTAS. No one should be set in this group.

No Report
Users of this group are denied access to the Quick Report function.

Develop
This group is reserved for Developers. No one must be set in this group.

Patent
This group is managed automatically. Ignore this group.

Technology
This group is managed automatically. Ignore this group.

All Sites
This group is managed automatically. Ignore this group.

4D Write
This group controls the access to the 4D Write licenses. The AutoAgent is automatically granted one license. Only people who are assigned to edit template letters or people who may need an integrated word processor should be set in this group.

Appendix C

Lists of the various letters

The following letters are available to be printed from the Technology table:

700 Series Technology letters

700 Initial Letter to NASA Innovator
701 Initial Letter to Contractor Innovator
702 Initial Letter to COSMIC
710 Class 1 - Notify NASA Innovator
711 Class 1 - Notify Contractor Innovator
720 Class 2 - Notify NASA Innovator
721 Class 2 - Notify Contractor Innovator
730 Class 3 - Reevaluate Class 1 - Notify NASA Innovator
731 Class 3 - Reevaluate Class 1 - Notify Contractor Innovator
732 Class 3 - No Reevaluation - Notify NASA Innovator
733 Class 3 - No Reevaluation - Notify Contractor Innovator
740 Class 4 - Reevaluate Class 1 - Notify NASA Innovator
741 Class 4 - Reevaluate Class 1 - Notify Contractor Innovator
742 Class 4 - No Reevaluation - Notify NASA Innovator
743 Class 4 - No Reevaluation - Notify Contractor Innovator
750 Draft Tech Brief to NASA Innovator
751 Draft Tech Brief to Contractor Innovator
752 Tech Brief Copy to NASA Innovator
753 Tech Brief Copy to Contractor Innovator
760 Evaluation Questionnaire to Non-NASA
790 Release to Disseminate SBIR Data
761 Evaluation Questionnaire to NASA Employee or Contractor at NASA
770 LeRC Final
780 New Letter to Inventor

800 Series Patent Letters

800 Patent Initial Docket Letter to NASA Innovator
810 Patent Inactivated Letter to NASA Innovator
820 Confirmatory License Request(Contractors)
830 Patent Applied For - NT Clause to CCR
831 Patent Application Filed to NASA Innovator
832 Patent Issued to NASA
833 Patent Issued to Company
834 Copy of U.S. Patent to NASA Innovator
840 Novelty Search - asap
841 Novelty Search
842 Inventor comments on Novelty Search
850 Forward License to HQ

100 Series Contract_Grant Letters

The following letters are available for printing from the Contract_Grant table:

100	Initial Letter to Contractor - NT Clause
101	Initial Letter to Contractor - Patents Rights (Contractor Clause)
102	Initial Letter to Contractor - Patent Rights (Grantee Clause)
110	Initial Letter to NASA Tech Rep - NT Clause
111	Initial Letter to NASA Tech Rep - PR (Contractor Clause)
112	Initial Letter to NASA Tech Rep - PR (Grantee Clause)
130	Request at End of Contract to Contractor - NT Clause
131	Request at End of Contract to Contractor - PR (Contractor Clause)
132	Request at End of Contract to Contractor - PR (Grantee Clause)
140	Request at End of Contract to NASA Tech Rep - NT Clause
141	Req. at End of Contract to NASA Tech Rep - PR (Contractor Clause)
142	Request at End of Contract to NASA Tech Rep - PR (Grantee Clause)
150	Request for Specific Items - NT Clause
151	Request for Specific Items - Patent Rights (Contractor)
152	Request for Specific Items - Patent Rights (Grantee)
160	Request at End of Contract to Contractor - NT Clause
161	Request at End of Contract to Contractor - PR (Contractor Clause)
162	Request at End of Contract to Contractor - PR (Grantee Clause)
165	Certification of Compliance to Contractor - NT Clause
166	Certification of Compliance to Contractor - PR (Contractor Clause)
167	Certification of Compliance to Contractor- PR (Grantee Clause)
170	Request at End of Contract to NASA Tech Rep - NT Clause
171	Req. at End of Contract to NASA Tech Rep - PR (Contractor Clause)
172	Request at End of Contract to NASA Tech Rep - PR (Grantee Clause)
175CG	Certification of Compliance to NASA - NT Clause
176CG	Certification of Compliance to NASA - PR (Contractor Clause)
177CG	Certification of Compliance to NASA - PR (Grantee)
199CG	Withholding of Payment - NT Clause

Appendix D

4D Write Error Codes

1000 - The paragraph is too large.
1001 - Invalid paragraph type.
1002 - Error while printing.
1003 - Invalid left margin (too close to the right margin).
1004 - Invalid indentation (too close to the right margin).
1005 - Invalid right margin (too close to the indent and/or left margin).
1006 - Invalid tab parameter.
1007 - Invalid array parameter. Array is not a valid type or size, or is not an array.
1008 - Your document is too large. Only a part of the document will be displayed.
1009 - There is not enough memory to copy or cut your selection.
1010 - Out of memory. A part of the document is lost.
1011 - Out of memory. Make the document shorter.
1012 - The file could not be saved.
1013 - Invalid selection. The beginning of the selection is before the start of file or the end of document is before the beginning of the selection.
1014 - Invalid reference to an external file.
1015 - The file could not be read.
1016 - Invalid menu item number.
1017 - This field does not seem to be a 4D Write field.
1018 - Unknown file type.
1019 - Invalid hot link type.
1020 - This hot link does not exist.
1021 - Error number.
1023 - Invalid 4 th Dimension file number.
1024 - A field of type Text can accept a maximum of 32000 characters.
1025 - You have not installed the correct Claris translators to read/write this file.
1026 - Out of memory. This command cannot be undone.
1027 - Invalid MacWrite™ file. Try opening the file with MacWrite.
1028 - Invalid parameter for the command WR SELECT.
1029 - This file does not contain a style sheet.
1030 - String is too long.
1031 - XTND is not installed.
1032 - This file does not exist.
1033 - The file could not be created.
1034 - No picture has been selected.
1035 - Invalid “Size” parameter.
1036 - Invalid “Position” parameter.
1037 - No references have been selected.
1038 - This style does not exist.

1039 - String too long to name a style sheet.
1040 - Value is out of range.
1041 - Insufficient memory to execute this command.
1042 - This font does not exist.
1043 - Invalid character size (less than 0 or greater than 127).
1044 - Invalid event type.
1045 - This procedure does not exist.
1046 - Invalid variable.
1047 - Invalid field reference.
1048 - Invalid option number.
1049 - This area cannot be saved because there is no current record.
1050 - There is not enough memory to display the debug window.
1051 - This path does not exist.
1052 - Insufficient memory for pasting selection.
1053 - You cannot insert a field. No file available.
1054 - The first parameter is invalid.ODES C
1055 - The second parameter is invalid.
1056 - The third parameter is invalid.
1057 - The fourth parameter is invalid.
1058 - The fifth parameter is invalid.
1059 - XTND is already active. Only one operation can be performed at a time.
1060 - You cannot insert a sub-field.
1061 - At least one hot link has been removed because it was not published.
1062 - At least one hot link has not been updated, for insufficient memory.
1063 - Hot link cannot be published under this name, it already exists.
1064 - Hot link cannot be subscribed, it would create circular references
1070 - Cannot insert hyphen at this place.
1071 - There is already a hyphen at this place.
1072 - There is no hyphen to remove at this place

Appendix E

NASA TechTracS Expressions

NASA TechTracS Expressions

Name	Reference Table	Description	Example	Result of Example
AttorneyName	Technology	Lists the name of the attorney specified in the selected Technology records. If there is none, a blank field will be returned.	AttorneyName	John P. Smith
CaseItems	Contract_Grant	Queries the Technology table for all records with the current Contract Number and lists their case number, title, and the notification received date. If no records are found, the string "None" will be returned.	CaseItems	KSC-123 Title123 (Received 12/12/96) KSC-456 Title456 (Received 01/01/96)
CC CompTR	Technology	If the Technology record has a Contract Number, this 4D expression will query the corresponding Company New Technology Representative (Co New Tech Rep) and return “CC” and his mail code, first name, and last name. If there's no Contract Number or no assigned Co New Tech Rep, a blank field will be returned.	CC CompTR	CC: MS-123/John P. Smith
CC Rep Dept	Contract Grant	Returns the Department field (Dept) of the Company Contract Representative (Co Contract Rep).	CC Rep Dept	Co Contract Rep Department Name
CC Rep Name	Contract Grant	Returns the First Name and Last Name of the Company Contract Representative (Co Contract Rep).	CC Rep Name	John P. Smith
CC Rep Title	Contract Grant	Returns the Title of the Company Contract Representative (Co Contract Rep).	CC Rep Title	Co Contract Rep Title
Company_Address	Company	Returns the complete HQ address with carriage returns for the current company record.	Company_Address	Street Address City, State ZipCode
Company_Name	Company	Returns the company name followed by a carriage return for the current company record.	Company_Name	Name of Company
CoNewTechRep	Technology	Queries the People table for the Company New Technology Representative associated with the Contract Number in the corresponding Contract Grant record. It will return the Department, Name, Title and Address for this person	CoNewTechRep	Department Name John P. Smith Title Street Address City, State ZipCode

NASA TechTracS Expressions

Name	Reference Table	Description	Example	Result of Example
Contract Grant	Contract Grant	Tests the field "Kind of Activity" in the Contract Grant table if it is "Contract Order" or " Research Grant", respectively "Contract" or "Grant" will be returned.	Contract Grant	“Contract” or “Grant”
Contrctr Grntee	Contract Grant	Tests the field "Kind of Activity" in the Contract Grant table. Returns the text “contractor” or “grantee” if the field value is “Contract Order” or “Research Grant” respectiely.	Contrctr Grntee	“contractor” or “grantee”
COTR MC Name	Contract Grant	Retruns the Mail Code and the Name of the NASA Contract Officer (NASA Cont Ofcr).	COTR MC Name	MS-123/John P. Smith
Due Date	generic	Returns the date determined by adding the specified number of days to the current date.	Due Date(10)	“4/20/98” if current date is 4/10/98
ExpTBCategory	generic	Returns the T.B. Category for the specified code. See the *TB Category* list.	ExpTBCategory(2)	Electronic Systems
FromPrpMS_Title	Technology	Returns the Title of the Technology Preparer and his/her Mail Stop related to the current Technology record. If none has been assigned to the Technology record, the name of the Tech Transfer Officer and Installation or Mailstop.	FromPrpMS_Title FromPrpMS_Title(0) FromPrpMS_Title(1)	MS-123/Perparer Title TTO Name & Installation TTO Name & Mailstop
GetMonthName	generic	Returns the month name for the specified date.	GetMonthName([Technology]Last Updated)	“January” if Last Updated is 01/10/98.
GetMonthNumber	generic	Returns the two character number representing the the month number of the specified month name.	GetMonthNumber([Technology]T TB Pub Month)	“05” if Pub Month is May.
HomeAddress	People	For the current record in the People table, the Home Address of the person. If there is none, nothing will be returned.	HomeAddress	Home Street Address Home City, State Zip
Last Name	generic	When given the People Code, returns the corresponding Last Name. This function queries the People Table.	Last Name([Contract_Grant]Co New Tech Rep)	“Smith” if Smith is linked to Contract-Grant.

NASA TechTracS Expressions

Name	Reference Table	Description	Example	Result of Example
Month Name	Technology	Returns the Name of the month for the current Technology record, T TB Pub Month field.	Month Name	Name of month
MonthEnd	generic	Returns the date of the last day of the month for the supplied date.	MonthEnd([Technology]P Filing Dt)	“5/30/98” if Filing Dt is 5/10/98.
MStop_Evaluator	Technology	For the current Technology record, returns the Mail Code and Name of the Technology Evaluator if present.	MStop_Evaluator	“MS-123/John P. Smith” if Smith is linked to Technology as T Eval Code.
MStop_PName	People	For the current People record, this expression will return the Mail Code and the First Name if the "Mail to Contractor's NASA Mail Code" is checked. If not, the First Name, Middle Initial, and Last Name will be displayed instead.	MStop_PName	“MS-123/John” or “John P. Smith”
NT Rep Address	Contract Grant	Queries the People table and returns the address of the Company New Technology Representative for the current Contract-Grant.	NT Rep Address	See *PeopleAddress*
NT Rep Dept	Contract Grant	Queries the People table and returns the Department of the Company New Technology Representative for the current Contract-Grant.	NT Rep Dept	“Department Name”
NT Rep Name	Contract Grant	Queries the People table and returns the full name of the Company New Technology Representative for the current Contract-Grant.	NT Rep Name	“John P. Smith”
NT Rep Title	Contract Grant	Queries the People table and returns the title of the Company New Technology Representative for the current Contract-Grant.	NT Rep Title	Title
NTISDescription	generic	Queries the NTIS Subs table and returns the NTIS description that matches the 4 character NTIS code passedto this 4D expression.	NTISDescription(NTIS Code)	“GRAPHICS COMMUNICATION” if NTAS Code is 45E.
Org Name	Technology and People	Queries the Org Codes tables and returns the Name field for the record matching the passed Org Code,	Org Name([People]Org Code)	Organization Name

NASA TechTracS Expressions

Name	Reference Table	Description	Example	Result of Example
Org_BName	generic	After querying the People tbale using the passed people code, returns the organisation code and its name.	Org_BName([TOPS]CTO POC)	*Org Name* of CTO POC people record.
PeopleAddress	People	For the current People record, the Home Address will be returned if the field "Address correspon-dence to home" is checked. If not, the regular address with the Mail code will be returned.	PeopleAddress	Street Address City, State Zip
PeopleCompany	Company	Returns the Name of the company for the current company record.	PeopleCompany	Company Name
PeopleCompDept	People	Returns the Company Name and the Department (Dept) for the current People record, if the field "Address correspondence to home" is not checked.	PeopleCompDept	Company Name Person's Department
PeopleFax	People	Returns a formatted fax number for the current People record.	PeopleFax	(123) 456-7890
PeopleHome	People	For for the current people record, returns the address of the person.	PeopleHome	Street Address City, State Zip
PeopleMailStop	People	If the field "Address correspondence to home" is not checked, the Mail Code for the current People record will be returned. If the field is checked, a blank string will be returned.	PeopleMailStop	"M.S. 1234" if Mail Code is 1234.
PeopleName	People	Returns the full name from a People record. The People table will be queried if the people code is supplied as a parameter.	PeopleName PeopleName([TOPS]CTO POC)	"John P. Smith" "John P. Smith" after query.
PeoplePhone	People	Returns a formatted phone number for the current People record.	PeoplePhone	(123) 456-7890
PeopleTitle	People	Returns the title of the current people record.	PeopleTitle	Person's Title

NASA TechTracS Expressions

Name	Reference Table	Description	Example	Result of Example
People_CCR	Contract Grant	For the current Contract-Grant record, returns the Department, the Name of the person, the Title, the MailStop, and the entire address of the Company Contract Representative (Co Contract Rep).	People_CCR	Department Name John P. Smith Title Street Address City, State ZipCode
People_Company	Technology	Returns the Name of the Company and its Address for the one company that is related to the Contract Number of the current Technology record. After this expression, both a Contract-Grant record and a Company recrd are loaded.	People_Company	*Company_Name* *Company_Address*
People_COTR	Contract Grant	For the current Contract Grant record, information is returned about the NASA Technical Point Of Contact after querying the People table. It will consist of: the person's company name, department, name, title and address.	People_COTR	Company Name Department Name John P. Smith Title Street Address City, State ZipCode
People_Eval	People	For the current People record, returns: person's company name, department, name, title, mailstop and address	People_Eval	Company Name Department Name John P. Smith Title Mailstop Street Address City, State ZipCode
People_INN	People	For the current People record, returns: person's company name, department, name, mailstop and address	People_INN	Company Name Department Name John P. Smith Mailstop Street Address City, State ZipCode
People_INNASA	People	For the current People record, returns: person's company name, department, name, title and address	People_INNASA	Company Name Department Name John P. Smith Title Street Address City, State ZipCode

NASA TechTracS Expressions

Name	Reference Table	Description	Example	Result of Example
People_NASACO	Contract Grant	For the current Contract Grant record a query is performed on the People table using the NASA Contracting Officer link, The expression returns Mail Code and full name of the person.	People_NASACO	“MS-123/John P. Smith” if Smith is linked to Contract-Grant as NASA Cont Ofcr.
Potential Items	Contract Grant	For the current Contract-Grant record, function lists every related Potential Reportable Item. If none are associated, the string "none" will be returned.	Potential Items	(1) Pot Rep Title One (2) Pot Rep Title Two etc.
PrepNameExtn	Technology	Returns the full Name and and Phone extension of the Technology Preparer.	PrepNameExtn	“John P. Smith 123” if Smith is Preparer for Technology and 123 is his extension.
PrepNameTitle	Technology	Returns the full Name and Title of the Technology Preparer. If none, nothing will display.	PrepNameTitle	“John P. Smith PersonTitle”
QRCGCo	Contract Grant	For the current Contract Grant record, the associated Company Name, Full Address, and Phone is returned.	QRCGCo	Company Name Street Address City, State ZipCode (123) 456-7890 EXT: 123
QRCoCaseNum	Company	Returns list of all Technology Case Numbers, related to all Contracts related to current Company record.	QRCoCaseNum	KSC-12345 KSC-45678 KSC-54321
QRCoCG	Company	For the current Company record, returns a list of related Contract Number(s) and Titles.	QRCoCG	NAS13-96731 “RESTORATION OF ...” NAS13-731 “DATA CONVERSION...”
QRCoPeople	Company	For current Company record, returns the full Name of the related people.	QRCoPeople	John P. Smith John T. Jones etc.
Region	generic	Returns the name of the region containing the specified state. The regions are: Far West, South East, Mid-Cont, Mid-West, Mid-Atlantic, Norteast, Unknown	Region([People]State)	“South East” if State is FL.
Sal	generic	Returns the Salutation of the People record referenced by the specified People Code after querying the People table.	Sal([TOPS]CTO POC)	“Miss”, “Mr.”, “Dr.”, etc.

NASA TechTracS Expressions

Name	Reference Table	Description	Example	Result of Example
Sal and LName	generic	Returns the Salutationand Last Name of the People record referenced by the specified People Code after querying the People table.	Sal and LName([TOPS]CTO POC)	“Miss Smith”, “Mr. Jones”, etc.
SICDescription	generic	Returns the Standard Industrial Classification description for the specified SIC code.	SICDescription([Company]SIC Code)	“KNITTING MACHINES” if SIC Code is 508493.
SSN	People	Returns a formatted Social Security Number for the current People record if the user is in the “Classified” security group.	SSN	“123-45-6789” or “Classified”
TechItem	Technology	Expands “TM” and “BN” Report Number field for the current Technology record.	TechItem	“Technical Memorandum 1234” if TM or “Patent Disclosure 1234” if BN else “New Technology Item”
TechInnovators	Technology	Returns list of names of innovators for the current Technology record.	TechInnovators	John P. Smith John T. Jones etc.
Tech_Evaluator	Technology	For the current Technology record, returns the Company Name and Address of the Technology Evaluator according to its type (COSMIC, Organization, or Person).	Tech_Evaluator	Company Name & Address for COSMIC or Organization; *People_Eval* otherwise.
ToCompany	Contract Grant	Returns the Company Name and Address for the current Contract Grant record.	ToCompany	Company Name & Address
ToCompfrmTech	Technology	Returns the Company Name and Address for the Contract-Grant record related to the current Technology record.	ToCompfrmTech	Company Name & Address
ToCompy_or_CCR	Contract Grant	Returns the Company Name, Company Contract Representative Name, Title, Mail Stop, and Address of the CO Contact Rep for the Contract. If there is no Co Contract Rep, the Company Name and Address will be returned.	ToCompy_or_CCR	CO Contact Rep information or Company Name & Address

NASA TechTracS Expressions

Name	Reference Table	Description	Example	Result of Example
ToCompy_or_Eval	Technology	For the current Technology record, returns the Address. Pass "0" or "1" as a paramater to get either the Name and Address or the Name and Mail Code. If the Technology Evaluation Code (T Eval Code) is a Person ("P"), then company contact's Address or Mail Code will be returned. If "T Eval Code" is an Organization ("O"), the Company's Address or Mail Code will be returned.	ToCompy_or_Eval(1) ToCompy_or_Eval	*PeopleName* and *PeopleMailStop* *PeopleName* and *CompanyName* or *PeopleName* and *PeopleAddress* or *Company_Name* and *Company Address*
ToNASATechRep	Contract Grant	For the current Contract Grant record, returns the Mail Code and Name of the Technical Point of contact after querying the People Table..	ToNASATechRep	“MS-123/John P. Smith” if Smith is linked to Contract-Grant as NASA Tech POC..
UPN Descript	Inventory	For the current Inventory record, returns the UPN Description after querying the Program Code table using the 7 Digit UPN field.	UPN Descript	“PROJECT SUPPORT” if 7 Digit UPN is 5948410.
vTTName	generic	Returns the Name of the Technology Transfer Officer.	vTTName	As shown in Constants record.
vTTTitle	generic	Returns the Title of the Technology Transfer Officer.	vTTTitle	As shown in Constants record.
vTTMailStop	generic	Returns the Mail Stop of the Technology Transfer Officer.	vTTMailStop	As shown in Constants record.
vTTPhone	generic	Returns the Phone number of the Technology Transfer Officer.	vTTPhone	As shown in Constants record.
vPATName	generic	Returns the Name of the Patent Counsel.	vPATName	As shown in Constants record.
vPATTitle	generic	Returns the Title of the Patent Counsel.	vPATTitle	As shown in Constants record.
vPTMailStop	generic	Returns the Mail Stop of the Patent Counsel.	vPTMailStop	As shown in Constants record.
vPATPhone	generic	Returns the Phone number of the Patent Counsel.	vPATPhone	As shown in Constants record.

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